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Virginia Medical Monthly

Official Organ of the Medical Society of Virginia

Vol. 56, No. 7.
WHOLE No. 928.

RICHMOND, VA., OCTOBER, 1929

20 CENTS A COPY
$2.00 A YEAR

THE SURGICAL CONSIDERATION OF THE DYSPEPSIAS CAUSED BY CHRONIC APPENDICITIS AND CHRONIC CHOLECYSTITIS.*

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Dyspepsia and indigestion, though unscientific terms, are the ones most frequently used by the patient to express the nature of his complaint, for to the lay mind dyspepsia is, regardless of its primary cause, merely a disturbance in the stomach following the intake of food. The causes of dyspepsia are many; the surgeon most commonly encounters it in those forms which have been induced by chronic appendicitis, chronic cholecystitis, duodenal ulcer, gastric ulcer, and gastric carcinoma. These diseases are all characterized by an insidious onset and chronicity. Perhaps the most insidious as well as the most common forms are those induced by chronic appendicitis and chronic cholecystitis. As a relationship between these two has been so frequently noted, we shall discuss them in this paper.

Etiology.—The etiology of chronic appendicitis and chronic cholecystitis has not been conclusively established; but Rosenow,[1] by producing these diseases in laboratory animals with streptococci grown from pathological tissue removed at operation and from pus obtained from foci of infection in patients suffering from chronic cholecystitis and chronic appendicitis, has given us the most logical explanation of the streptococcic factor as a cause. The conclusions of Wilkie,[2] based upon his recent bacteriological study of tissues removed at operation in fifty consecutive cases of gall-bladder disease, tend to corroborate Rosenow's results. In this study streptococci were grown in 42 per cent of the cases where cultures were made from tissue removed from the outer and sub-mucous layers of the gall-bladder, leaving the mucosa intact. One of the outstanding features of Wilkie's study was the growing, in 86 per cent of the cases, of streptococci from lymph glands found lying along the cystic duct and removed at operation. Wilkie found that the bile from the gall-bladder was sterile in the majority of cases and, a most interesting observation, that bile inhibited the growth of the tissue streptococci. He concluded that cholecystitis is a blood-borne, streptococcic, intramural infection. In our own study of sections of the appendix removed at operation from cases of chronic appendicitis, and stained by McCallum's method, we have found streptococci. Other less clearly established etiological factors probably contribute to the cause of these diseases.

Incidence.—The incidence of these diseases can be determined only by a careful study of the gall-bladder and the appendix obtained at necropsy from cadavers of patients dying from all causes. Carman, MacCarty, and Camp,[3] in such a study of cholecystic disease, found macroscopic or microscopic evidence of gall-bladder disease in sixty-four out of 100 consecutive necropsies, all performed in one year. Chronic appendicitis is such a common pathologic lesion that in nearly every instance macroscopic or microscopic evidence of it can be found at operation or necropsy. In a series of 320 consecutive necropsies† performed by one of us (E. Horgan) after deaths from various causes and at all ages, evidence of appendicitis was found in 134 instances (41.8 per cent). The appendix was noted to be without pathologic change in 179 instances; in six instances the condition was not noted; and in one there was a congenital absence of the appendix. The pathologic change was chronic in 123 instances and acute in eleven. Of this group ninety were males and forty-four were females.

Age.—These diseases occur at all ages but are most frequent in middle life. Eusterman,[4] reviewing a total of 13,500 cases of disease of the gall-bladder, found only 0.85 per cent in the first two decades, about 52 per cent in the third and fourth decades, and 47 per cent beyond the fourth decade; but of the cases

*Submitted for publication, July 25, 1929.

†Performed at the Mayo Clinic in 1915.

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with gall-stones 69 per cent were beyond the fourth decade.

Sex.—Of 9,115 cases of gall-stones reviewed by Eusterman, 24 per cent were males and 76 per cent females. The ratio is practically the same in cholecystitis without stones. In 4,987 cases of cholecystitis, 28 per cent were males and 72 per cent females. In 227 cases of chronic appendicitis which we have operated on in the last five years, 38 per cent were males and 62 per cent were females.

Cholecystitis

Chronic cholecystitis appears in every stage from the very mild to the most distressing forms. In the more severe cases the symptoms are clearly marked and the diagnosis becomes correspondingly simple. "Gas and sour stomach" are the symptoms which most frequently disturb the patient; these often have been of long standing, and may have become increasingly constant. They may be of irregular or of almost daily occurrence. The distress may come on during the meal or, as most often happens, shortly after the meal. It is generally more marked after the evening meal and sometimes continues into the night. There seems to be no seasonal variation or periodicity. The patient with cholecystitis usually retains his weight and indulges his appetite until continued discomfort forces him to a rigid diet. He commonly complains that distress comes after taking food that disagrees with him, after an indiscretion in diet, or because of constipation. The patient finds that he may enjoy comparative freedom from discomfort by avoiding certain foods that cause "repeating," and certain other foods that cause "distress." Fried, greasy, or sour foods, salads, and certain meats, such as pork and sometimes lamb and veal, vegetables, such as cabbage, onions, and radishes, and among the fruits, raw apples and bananas, may bring on this qualitative food distress. Gas with belching, bloating of the abdomen, fullness in the epigastrium, and pressure in the lower part of the chest are the chief symptoms. Eructations of sour or hot, burning fluid may accompany the epigastric distress. Nausea, which is common and in some cases very marked, is usually relieved by belching, sometimes by vomiting. Occasionally the patient induces vomiting. Soda gives little relief. Nausea with headache, usually referred to as "biliousness," is not uncommon. The vomiting of blood, or blood in the stools, occurs in cholecystitis only when there is a marked hepatitis or cirrhosis of the liver. Tenderness in the region of the gall-bladder and along the lower border of the liver may, when present, be found on physical examination.

Chemical examination of the stomach contents is usually made, but its value in diagnosis is chiefly the negative one of determining the absence of gastric or duodenal disease. The Meltzer-Lyons method of biliary drainage has not proved useful as a diagnostic aid because the findings cannot be reliably interpreted in diagnosing any given case. The visualization of the gall-bladder by means of the X-ray, following the intravenous injection of sodium tetra-iodophenolphthalein by the technique of Graham, Cole, and Copher,[5] is giving us aid in diagnosing chronic cholecystitis and cholelithiasis. It is a method, however, which is reliable only when the findings are considered along with the other laboratory findings, a physical examination, and the history of the patient.

Patients having cholelithiasis, besides showing symptoms similar to those of cholecystitis, may have had one or more attacks of colic, followed in some cases by jaundice. These attacks have no definite relation to the eating of food and may occur at any time during the day or night. Sudden pain, so severe that it causes the patient to "double up" and usually requires morphine to relieve him, is characteristic. The pain, lasting from a few minutes to a few hours' starts in the epigastrium, goes through to the back, and radiates to the right shoulder. It goes as suddenly as it comes, but leaves soreness in the muscles of the epigastrium from contraction during the attack, and tenderness if the gall-bladder is distended by a stone becoming impacted in the cystic duct. Rigidity and muscle spasm occur only if an obstructing stone in one of the ducts causes the gall-bladder to become distended with a resulting inflammatory reaction.

Chronic Appendicitis

Chronic appendicitis may simulate cholecystitis, gastric or duodenal ulcer. Epigastric distress is often present and is sometimes accompanied by nausea. This epigastric discomfort may be more or less continuous or may come in "spells," which show no periodicity. The discomfort occurs very irregularly with regard to meals and time of day. The patient gains no relief from taking food or alkalies, although soda may at times relieve him.

Vomiting of blood has been noted occasionally in chronic appendicitis. In diagnosing this condition, chemical laboratory or roentgenological studies have not developed tests or methods that are of much aid. Surgical diagnosis depends upon the history of an indeterminate dyspepsia which may have been preceded by an acute attack of appendicitis or, more commonly, by several mild attacks; and, occasionally, upon tenderness on deep pressure in the region of the appendix.

Treatment

Every case of chronic appendicitis and chronic cholecystitis has its medical phase. In the earlier stages patients should be given dietary treatment. Such conditions as hypertension, heart, and kidney disease should receive attention and treatment; and, if surgical treatment is instituted, the medical treatment should be continued along with the post-operative care.

Foci of infection, such as alveolar abscesses and infected tonsils, must be searched for in every case; but it is not always wise to treat them immediately in case they are found. These foci should not be disturbed if surgical treatment has been decided on and if the patient is being prepared for operation, as one of the so-called "focal reactions" may follow which will make it necessary to delay the operation. They are best treated at some later time, usually during the period of convalescence.

Often the deciding factor between medical and surgical treatment is the patient's ability to obey faithfully a long and complicated dietary regime. In many cases of cholecystitis the symptoms are so mild that the patient can be relatively comfortable by dietary measures. This may be accomplished in some cases without much difficulty and without rigid diet restrictions. When there is cholecystitis producing nausea, bloating, and epigastric distress after each meal, and when the discomfort of the patient is more or less constant, surgical treatment should be advised.

The patient with chronic appendicitis should be advised to have an operation for the removal of the appendix when he has almost constant epigastric distress or frequent attacks of indigestion with nausea, belching, and vomiting; also, when he has gastric hemorrhage, loss of weight, and anemia; and particularly when he has had previous attacks of appendicitis.

Surgery.—In operating for cholecystitis a right rectus incision should be made to allow for an exposure sufficiently large to palpate and inspect the gall-bladder and bile ducts, liver, and pancreas. The pathological conditions in any of these structures are found by (1) inspecting the gall-bladder for change in color, size, shape, and deposit of fat in the gall-bladder wall, (2) inspecting the liver in the region of the gall-bladder for localized cirrhosis, which is commonly found in inflammatory diseases of the gall-bladder, (3) palpating the gall-bladder to ascertain the thickness of the wall and the presence of stones, (4) palpating the hilum of the liver and the ducts for enlarged lymph glands, (5) palpating the head of the pancreas for enlargement and hardness, and (6) palpating the cystic, hepatic, and common ducts for stones. By this procedure, any pathological condition of the biliary tract, gall-bladder, or liver should be demonstrated. Associated pathological conditions are found by examining the stomach, duodenum, spleen, and appendix.

The gall-bladder should be removed for chronic cholecystitis, with or without stones, if the condition of the patient permits. When there have been many acute or subacute attacks producing firm adhesions of the gall-bladder to its neighboring structures, when jaundice is present, and, also, when there are such complicating diseases as nephritis, hepatitis, and myocarditis, a cholecystostomy is advisable because it can be done speedily and with very little trauma. In the presence of these conditions a cholcystostomy might better be made to save the patient's life, even though a cholecystectomy should follow later to give him relief from his symptoms.

The appendix should be inspected and palpated in all cases of gastric and duodenal ulcer, cholecystitis, cholelithiasis, and pancreatitis, and, unless there is a contraindication for it in the condition of the patient, the appendix should be removed. A right paramedian incision should be made in operating for chronic appendicitis. When the abdomen has been opened, the liver, gall-bladder, bile ducts, pancreas, stomach, and duodenum should be examined, as chronic pathological conditions in these tissues are often associated with a chronic condition of the appendix. The presence of chronic appendicitis can be determined by (1) inspecting the appendix for kinks and adhesions, (2) palpating the appen-

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dix for concretions and induration in the wall, and (3) inspecting and palpating the mesentery, terminal ileum, and cecum for enlarged inflammatory lymph glands.

As we look upon chronic appendicitis as a chronic infection and a focus from which other tissues may become diseased, we strongly urge the removal of the appendix as soon as the condition is recognized. In this way, we hope we may often prevent a cholecystitis, a duodenal ulcer, or a gastric ulcer. For the same reason, in an operation on a patient who has gastric ulcer, duodenal ulcer, or cholecystitis, the appendix should be removed in order to prevent the occurrence later of one of the other of these diseases.

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1801 *Eye Street, Northwest.*

OSTEITIS DEFORMANS—(PAGET'S DISEASE.)

Report of Case.

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and
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Miss L. W. J., a white female, age seventy-five years, was admitted to the Eastern State Hospital, at Williamsburg, Va., from Gloucester County, Va., on January 1, 1929. Patient is by occupation a school teacher.

The commitment paper stated that her mental illness began on December 1, 1928. The first symptoms noted were wandering, auditory hallucinations, delusions, disorientation and rambling conversation. At this time the patient was destructive of clothing. It is stated that she attempted to injure others, although this is very doubtful. It is further stated that she made imaginary phone calls to heaven.

Mental status: that of rather advanced arterio-sclerosis. The patient is childish, wanders about aimlessly. She is disoriented for persons, time and place.

PHYSICAL STATUS ON ADMISSION

Head and Neck: Patient is seen to be an elderly white woman, with a head of enormous size. Ears negative. Eyes: No exophthalmos, no nystagmus, no ptosis, no strabismus. Eye ground examined under mydriatic and found to present the usual appearance of an arterio-sclerotic disc.

Neck: There is marked prominence of the veins and arteries in a recumbent position and the veins empty normally on going from the recumbent to the upright position.

Head measurements are from glabella to post-occipital protuberance 35 c.m.; mastoid to mastoid over parietal region 40 c.m., circumference at level of brow 64 c.m. There is marked tortuosity and thickening of the temporal vessels.

Chest: The chest is flat and markedly contracted in its lateral diameter. The nipple is in the anterior axillary line.

Heart: The apex beat of the heart is located by palpation in the sixth interspace anterior axillary line. There is an apical thrill and also a high pitched apical murmur. No changes to percussion or auscultation over the lung fields.

Abdomen: The abdomen is negative. There are no tumor masses and no tender points; no palpable viscera.

Upper Extremities: Voluntary movements are normal. Tendon reflexes are normally active. Blood pressure on the left arm while in a recumbent position is 160/80. Arterio-sclerosis of the peripheral vessels.

Lower Extremities: Voluntary movements are normal. Tendon reflexes normally active. No ankle clonus, no Oppenheim, no Babinski.

Gait: The patient walks with the right leg everted and bowed forward, and there is also forward bowing of the left leg, but not so marked as the right. The chin is sunk forward on the sternum. The entire trunk inclines to the left. There is scoliosis and kyphosis of the spine.

Sensation: Sensation to heat and cold could not be tested, neither could light touch be tested on account of lack of cooperation. Patient reacts normally to pin prick. The attitude in standing is simian.

Laboratory Findings:

Blood sugar 80 mg.

Blood urea 12 mg.

Blood count Hbg. 80 per cent; W. B. C.

8,000; R. B. C. 3,820,000; Pmn. 81; Smn. 14; Lmn. 1; Trans. 4.

Blood Wassermann negative.

X-ray Findings: On account of the extreme size of this patient's head and evidence of peripheral arteriosclerosis, it was decided that films should be made of the skull. Patient was very non-cooperative and it was impossible to get stereoscopic films. When the first flat plate was developed, however, a remarkable condition was seen to obtain in the bones of the skull. The appearance was so remarkable that it was at first thought the patient had moved and blurred the film. She was re-rayed and the same condition of the bones of the skull was noted.

Photos of various positions of patient with Paget's Disease.

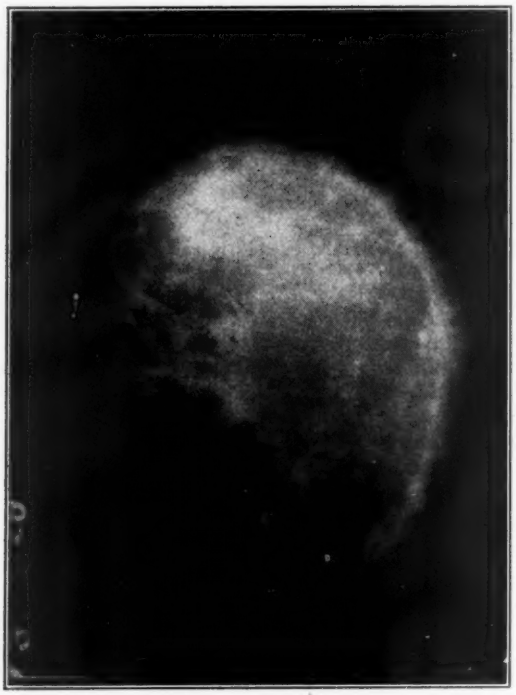
Diagnosis of Paget's disease of the skull was then first entertained, and examination by X-ray of the other bones of the body and further observation of the patient confirmed this diagnosis.

In the films of the skull the thickness of the cranium from outer to inner table appears to be from ¾ to 1 inch. There are areas of increased density, some of which resemble calculi, interspersed with areas which are quite non-opaque to the X-ray. The sella turcica appears both small and deformed. There is a marked change in the lower lumbar vertebrae. The vertebrae are seen to have a white, chalky appearance, and the outlines of the individual vertebrae are quite indistinct. There is reticulation of the bone in the upper portion of both femurs. There is a marked bowing of the tibia, especially on the left. There is marked sclerosis of the anterior tibial artery in the film.

Historical

Paget reported his first cases in 1877. Altogether he had twenty-three: males were seventeen and females six. Up to 1914, 213 cases had been reported. Hurwitz found only three in 30,000 medical admissions to the Johns Hopkins Hospital and DaCosta the same in 38,000 admissions to the Jefferson Hospital in Philadelphia. On account of the increasing use of the X-ray, more cases are now being reported. E. A. Locke, writing in Oxford Medicine, states that with the exception of syphilis, osteitis deformans is the most common of chronic bone diseases.

Etiology: The cause of this condition is not known. Marie, who reports a case with psychosis in a soldier of the French Foreign Legion, seems inclined to attribute the trouble to a disturbance of the hypophysis. This patient showed a manic depressive coloring, as well as epileptiform seizures. In the X-ray study of the case, Marie found a deformed sella turcica. Another theory of the etiology is that the condition is a form of cancer. The relationship between the condition and cancer appears quite close, but the weight of evi-



Film showing changes in bones of skull.

dence would seem to indicate that they exist as contemporaries. Of eight cases traced to the end, five died with cancer or sarcoma. The relationship between it and syphilis was formerly considered quite close, but the X-ray and the Wassermann reaction have since disproven any such connection.

Age Incidence: The most frequent ages at which the disease is first observed are between forty and fifty. In one it began at thirty-five and in another at thirty-eight. I am informed that one case was reported at the age of twenty-three, although I did not myself see this reference in the literature.

Pathology: Paget complained that the disease had been given various names. Some of these were as follows: hyperostosis, osteoporosis and senile rachitis. He expressed the hope that it would be recognized as a pathological entity. The X-ray has contributed a great deal to our knowledge of the pathology. The pathology is concerned with the bony frame work of the body. According to Locke, the nature of the process is now accepted as a double one: first, a lacunar absorption of bone by osteoclasts (Askanazy); second, the formation of new "fibro-osteoid" tissue, which may at first be poor in lime salts and late in the disease become sclerotic. In other words, there is a double process of rarefaction (malacia) and new bone formation essentially of connective tissue origin. As Rapp states, the X-ray appearance of this disease is first a rarefaction which may simulate a cystic condition and which has been described as a transparency of the cortical bone. This is later replaced by a great reticulation which on post-mortem examination is found to be due to a spongy bony framework, the interstices of which are filled with a soft tissue, with practically no calcium.

Symptomatology: Paget's original case began with aching in the legs. This was felt chiefly after exercise. Pain was never severe. This patient was not seen until about two years after the condition started. About three years after the onset, the man thought that the right side of his skull was enlarged because his hats did not fit him. He was a member of the yeomanry and he noted that his military helmet had to be enlarged each year. Paget describes his attitude in standing as simian. (This simian attitude is striking in our case).

Film showing changes in sternum.

Film showing bony changes in pelvis.

One marked feature of this condition is that there is an enormous enlargement of the skull, the features meanwhile remaining normal. This is in marked contrast to acromegaly, in which there is universal enlargement of the features, as well as the bony part of the head. There is frequently a bowing forward of the tibiae and femora. There is often scoliosis and kyphosis in the spine. The enormous size of the head is due to the increase in thickness of the skull. The patient characteristically walks with a bowed head. There may be pressure on the cranial nerves and blindness. Four of Paget's cases became blind. As Paget observes, the large head is in contrast with the features of normal size, or even intellectual or handsome.

In most cases the symptoms are attributed to advancing age and the patients seldom seek advice unless driven to do so by pain or disability. Cases formerly diagnosed as ethmoiditis or various neuralgias, by the use of the roentgen ray are frequently shown to be Paget's.

Diagnosis: The diagnosis is made by means of X-ray. According to Carman, the X-ray findings in the skull are pathognomonic.

The bones usually affected are tibiae, femora, clavicles, spine and vault of the skull.

Treatment: There is no treatment other than symptomatic for this condition. Rapp has suggested that diathermy may be of value. Apparently this has not been adequately tried. The diagnosis is important to prevent unwarranted surgical interference and to differentiate from other conditions.

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Film showing moderate bowing of right tibia.

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POTTER'S VERSION—A FURTHER CONSIDERATION.*

By ROBERT P. KELLY, M. D., F. A. C. S., Lynchburg, Va.

Some years ago Dr. Irving W. Potter, of Buffalo, startled the world by his claims for a "new method" of delivery which would alleviate the pains and agonies of child-birth, making the ordeal of labor less dreadful to women, reduce infant and maternal morbidity and mortality, shorten labor by eliminating the second stage and enable the obstetrician to do more work and have more time for rest and recreation.

As is usually the case with innovations and fads, the claims of the Buffalo doctor attracted much attention. Many physicians from all parts of the United States and Canada flocked to Buffalo to see this marvelous man and to learn, first hand, of his wonderful accomplishments. The news of his great achievements spread like wild-fire, the medical journals teemed with articles for and against his method. In almost every maternity hospital in the land Potter and his method became the chief topic of conversation, and no other obstetrician was considered completely educated who had not seen him at work.

Strange, and sad too, to relate, many came away quite favorably impressed with Potter and his teachings, though others were not yet prepared to accept this "new method" as the greatest obstetrical improvement of the age. A few, however, returned home disappointed and disapproving.

It was my privilege to see the work of this famous man. I observed him closely for several days. He is big, strong, skilful in his method and seemingly honest in his convictions that, so far as he is concerned, his method of delivery is better than any other. Yet, in my opinion, he is entirely wrong; he loses many babies, but that seems not to deter him, he continues to flirt with nature as if nothing had happened. I say this because I saw him lose one baby and barely escape the loss of another, both situations having been created by his unnecessary method of delivery —version.

In justice to him, it is only fair to state that he has probably taught us a better method of version and extraction than we learned as medical students. He has taught us that we need not hurry so with our extractions, that failure to complete the delivery within eight minutes will not be fatal to the baby. This is the extent of the praise I can render him.

What has he done, however, in order to attain to this end? He has lost, and caused to be lost by his teachings, many babies that should have been born alive. He has injured many more. His influence for bad has been so extensive that, at present, there are practically in every part of the United States, physicians who are delivering babies by his method and who are, as a result, increasing the infant and maternal morbidity and mortality to such a degree that it is doubtful if the conditions can soon be overcome, even by the steadily increasing number of trained and conservative obstetricians throughout the country.

Some men who have visited Potter for a week and who have had no special training, have returned to their homes full-fledged obstetricians, and have gone about practicing his method of delivery, losing and injuring mothers and babies to an even greater extent than does Potter himself; yet, in their respective localities they are often lauded by some of their fellow practitioners and held in the highest esteem simply because they can do a Potter version without losing more than from 7 to 15 per cent of the babies.

I have done a number of Potter versions, some two hundred I should say. I visited Potter in June, 1921, returning home somewhat enthusiastic, somewhat disgusted. Shortly after reaching home I had a case in which version was definitely indicated (prolapsed arm). The patient was a multipara who had lost her perineum on some former similar occasion. The delivery was easy and I was greatly pleased with the results of my first Potter version. I decided that in the future when version was indicated I would use Potter's method. Subsequently, I very carefully selected from my patients a number of multiparae and a few primiparae on whom I felt reasonably sure, as the result of careful pelvic measurements and estimation of the baby's size, that I could perform successfully a Potter version. Notwithstanding the fact that my cases were thus selected, except those with definite indications for version, I had too much morbidity to be very happy. My idea was to test this method thoroughly before expressing an opinion. After practicing Potter's method for several years, not as routine but in selected

*Read before the meeting of the South Piedmont Medical Society, at Lynchburg, Va., April 19, 1927.

cases, as stated, I was fortunate enough to work for six months with Dr. Jos. B. DeLee and his associates, at the Chicago Lying-in Hospital and Dispensary. DeLee refuses to allow Potter to do a version in that institution, and makes in a letter to me, dated March 12, 1927, the following statement:* "Naturally I know a great deal about Potter's work. It has always appealed to me as being thoroughly unscientific and dangerous, dangerous not alone in Potter's hands but particularly for the general practitioner. The mortality which Potter himself admits is twice as high as the mortality here at the hospital, and it means that a large number of babies are being killed annually for no good purpose whatever. I am sure that Potterism contributes, in a large measure, to the maintenance of the present high fetal and maternal mortality in the United States."

Dr. J. Whitridge Williams writes me as follows: "Every one who visits Potter with a critical mind comes away pretty well disgusted with him. For example, I had with me for a number of years, a very keen Chinese assistant. He spent two weeks with Potter and kept a careful journal of everything he saw, and, when summarizing his experience, he stated that during the two weeks' stay, Potter lost more babies than he admitted in his statement for the entire year. I understand that unless the baby is born dead he assumes no responsibility for its death, and he does this with a relatively clear conscience by immediately transferring the baby to the care of a pediatrician, who, in case it dies, fills out the death certificate and takes the responsibility of death upon his shoulders."

In a letter of April 9, 1927, Dr. John Osborn Polak has the following to say: "I still maintain, and I think all obstetricians admit, that Potter is an artist in doing his versions; that he has perfected a perfect technique for extraction, and, by following it in detail in breech deliveries, many babies that were previously lost may be saved, but version, as an elective operation, to shorten the second stage of labor, is not justifiable when we have at hand methods to relieve the pain of a short second stage which do not harm either mother or child. If Dr. Potter could show us how to shorten the first stage, I think that he might have more followers among the better men. The midwives in Newark have less than 2 per cent fetal mortality, and there are numberless series of a thousand cases with less than 4 per cent still-births and fetal mortalities, without putting the mother to any increased danger, so that, personally, I do not feel that the indications for a Potter version have a leg to stand on, and his teachings have caused a very large increase in operative interference and in both the mortality and morbidity of the mothers. If the expert only, who has done two or three thousand versions, adopted this method it wouldn't be so bad, but it is the mother who pays the cost while the surgeon is getting his experience. I am teaching Potter's version wherever version is indicated, but it is not indicated 920 times in 1,100 confinements."

When we are forced to do a version and lose the child as the result, we feel that we have done no wrong, but, on the other hand, when we elect to do a version without an indication and lose the baby, we should feel that we are directly responsible for its death.

There are many reasons why we should oppose Potter's method of delivery. It was never intended that babies should be born feet first. Such a delivery, *per se*, gives a much higher morbidity and mortality, even in the hands of trained and experienced men, while a breech case is always looked upon as unfavorable, especially in a primipara.

It is absolutely impossible to do versions as Potter does them without putting the hand in the uterus, which, we must admit, greatly increases the probability of infection, regardless of what Potter and others may claim to the contrary. In fact, the danger of infection is in direct proportion to the number of vaginal examinations and intra-uterine manipulations. No one can deny this statement, for it has been demonstrated. Therefore, the danger is increased when we invade the uterus. If this were not true, why should the best authorities insist on rectal examinations in the conduct of confinements? In some of our maternity hospitals vaginal examinations are strictly forbidden except by special permission and then only in the presence of unusual conditions.

In doing Potter versions the injury to both mother and baby must, of necessity, be markedly increased. The mother's cervix and perineum are more frequently lacerated and the

*This letter and those following are quoted with the permission of the writers.

uterus is more often ruptured. The baby suffers from fracture of the long bones, especially the arms and clavicle; also from spinal and cerebral injury, with their ultimate effects of paralysis and epilepsy.

The practice is also bad on account of the fact that the influence of those patients who escape, apparently unharmed and without any *present* ill effects, are advocates of the method, and are instrumental in sending others to be subjected to the same dangers, but perhaps not always with even as good results.

If it were possible—unfortunately it is not—thoroughly to educate and instruct the mothers along this line, to make them realize the great danger to themselves and their babies from such ruthless methods of delivery, there would not be one, I venture to say, who would not be perfectly willing to suffer the small amount of pain now necessary for a safe delivery. Nor does the patient, if she is in the hands of a competent obstetrician, with our present means of relieving pain, suffer much more, if any, under conservative methods than under the Potter version.

Most of the pain in labor is during the first stage, and in the case of multiparae the second stage is often very short, sometimes not over five minutes. Likewise, the second stage in many primiparae is very short, and we can make the second stage in either case practically painless by the use of various anesthetics now available. Granted that this is true, and being certain that it is decidedly safer for all concerned, why should ever an elective Potter version be done?

On November 22, 1921, in Danville, Va., I read a paper on "Bags and Version, Indications and Contra-indications," in which I made the following statement: "Version is contra-indicated as a routine method of delivery, proof of which is seen in the statistics (admitted) of one who is more skilled in its technique and who has performed more versions than any other man—Dr. Irving W. Potter." I would like to add, in this connection, that I am *positive* that the use of *bags, followed by version*, definitely increases the infant and maternal morbidity and mortality, above that which is due to versions *alone*, as was brought out in the same paper, which was published in the VIRGINIA MEDICAL MONTHLY, March, 1922.

It is a fact that in many cases in which bags are used to dilate the cervix, the latter is lacerated by the bag itself, if not by the version. I have noticed this in cases in which it has been necessary to induce labor by means of a bag, especially when the largest bag has been used and very much weight applied, and when the labor has been allowed to proceed otherwise without interference of any sort.

It is my opinion that some men are doing these versions simply to add to their fame as obstetricians, to be advertised, to attract attention of the profession and to draw patients, though I feel that a few men, due to lack of knowledge of the dangers, are more or less conscientious in advocating Potterism. As far as results are concerned, one is as bad as the other, but I do sympathize with the latter more than the former, since there is some hope for the conscientious man. Time may show him the error of his way.

I do not believe that a *well trained* obstetrician in the United States, or any other place, is doing, or will ever do Potter's version as a *routine* method of delivery. I think the more a man knows about obstetrics the more he opposes Potterism, and I feel that we should use our influence to combat such unwarranted teaching and practice. I am certain that much harm has already been done by Potter and his disciples, and that many physicians throughout the country have been made to believe that such a method of delivery is the greatest advance in obstetrics in the past twenty years. As a proof of the contrary, there is not a *real obstetrician* in the United States who does not oppose Potterism.

I fear that we are not fighting this thing as we should, not so much on account of the difference of opinion as on account of the deaths caused by this method. We fight disease because it causes death; then let us fight Potterism for the same reason, for no doubt it is the cause directly or indirectly of more deaths than many of the diseases we constantly combat.

In traveling over various parts of the state, I have been frequently asked the question: "Do you know about this *new method* of delivery?" This question has been asked me by both doctors and laymen, as if there were some mystery about it. Probably to them it is a mystery, but I wish to use this opportunity to tell them that there is no trick to it. It merely consists in doing version after dilatation is complete, or nearly complete; or, it con-

sists in putting a bag in the cervix at an appointed time and doing version as soon as the bag passes through the cervix.

The former is known as Potter's version. Potter does not use or believe in the use of bags, but allows his patients to go into labor naturally and dilate naturally. I do not know to whom to *charge* the combination of "bags and version," but it is much worse than Potterism. When large amounts of morphine and scopolamine are used before putting in the bag and while it is still in utero, the danger to the baby is further increased, though the writer uses moderate amounts in labors, especially in primiparae.

As stated before, there is no trick about all this; any doctor can do it and save *some* of the babies and *most* of the mothers. You don't even have to be an obstetrician to do it, and you are not an obstetrician because you can do it.

My reason for writing this paper is that I have never seen an article in the VIRGINIA MEDICAL MONTHLY in opposition to this method except the one I wrote in 1921, while there have been several publications in this Journal favoring it. Also, I feel it my duty to do all in my power to overcome the bad effects of such teaching, and to take this means of informing the general practitioners throughout the state who have not had an opportunity to get at the bottom of this thing, that there are two sides to the question and that Potterism is an extremely dangerous practice.

If I were not convinced of this, why shouldn't I deliver my cases by this method? I am thoroughly familiar with the process. I could get advertisement, attracting thereby more patients. I could save time, too; but, my fellow practitioners, I value the lives of mothers and babies higher than my time.

Let me say, in conclusion, that I wish to attach little blame to those men who *conscientiously* favor and practice this method of delivery, but I urge them to return to the altar of conservatism, confess their sins and use their influence against this or any other method which increases infant and maternal morbidity and mortality. I still maintain that the only way to get the best results in obstetrics is never to do anything without a definite indication.

1112 *Church Street.*

BRONCHIAL OBSTRUCTION.*

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As a result of bronchial obstruction, we get certain physical signs which are more or less dependent on the following factors:

(a) Type of obstructing agent, such as a mineral or vegetable foreign body, mucous plug, or neoplasm.

(b) Location and degree of obstruction.

(c) Duration of obstruction.

The three types of obstruction most commonly encountered are:

Fig. 1.—A normal lung injected with lipiodol to outline the left bronchial tree.

(1) Partial obstruction to ingress and egress of air, in which the physical signs may vary from diminished expansion to those of advanced pulmonary suppuration and bronchiectasis.

(2) Expiratory check valve obstruction. Here we usually find marked limitation of expansion, as a result of the obstructive emphysema, the heart and mediastinal structure being pushed over to the opposite or sound

*Read before the Virginia Society of Otolarynogology and Ophthalmology, in Staunton, Va., April 27, 1929.

side, simulating a pneumothorax. The mechanism of this confusing picture has been well shown by Jackson as due to the normal bronchial movements of dilatation and expansion, in which air passes by the obstruction on inspiratory dilatation but is unable to escape during the expiratory contraction, at which time the obstruction tightly corks the bronchus and traps the air.

(3) Complete obstruction. The air in the occluded lung is soon absorbed and atelectasis ensues, after which the air spaces become filled with secretion and the condition of drowned lung, so aptly named by Chevalier Jackson, is found.

In this condition there is a compensatory emphysema of the opposite or sound lung, and the heart and mediastinal structures are drawn over to the affected side.

This condition simulates an empyema; however if this condition has been present for a long period the picture may simulate advanced tuberculosis.

The physical signs produced under these varied conditions will naturally vary widely according to the above factors. However, there are two which are practically always present:

(1) Lagging of either chest wall or diaphragm as shown on inspection or fluoroscopy.

(2) An asthmatoid wheeze.

The X-ray furnishes the best source of information in these cases as the following pictures illustrative of the various types of obstruction will show. However, a careful physical examination is essential, for in some cases no evidence can be obtained on X-ray examination.

Fig. 2.—Partial obstruction type 1. Boy, eighteen years, whistle in left bronchus, one week. Only symptoms were hemoptysis and cough; only physical sign was a slight lagging of the left chest wall.

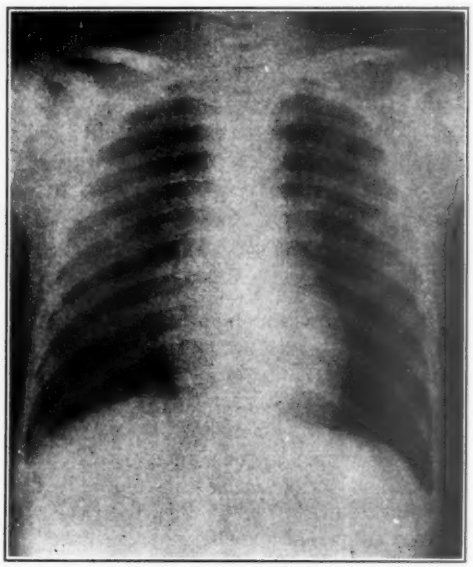

Fig. 3.—Partial obstruction type 1. Boy, six years, grain corn in right bronchus, 12 hours. X-ray entirely negative; physical signs were: marked asthmatoid wheeze, lagging right chest wall, diminished breath sounds over right lower and middle lobes, and diffuse moist rales over both lungs.

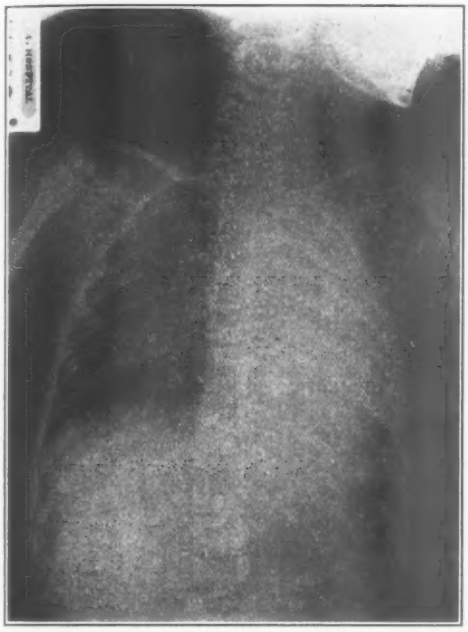

Fig. 4.—Complete obstruction type 3. Boy, four years, grain corn in left bronchus, one day. Presented lagging left chest wall and marked dullness on percussion. This condition of drowned lung rapidly cleared after removal of foreign body.

Fig. 6.—Complete obstruction, type 3. Girl, three years, peanut in left bronchus, 2 months. Physical signs were marked lagging left chest, mediastinal structures to left, marked dullness on percussion from apex to 4th rib in front and M. S. R. in back, dull tympany below; no rales; emphysema right.

Fig. 5.—Expiratory check valve, type 2. Girl, one year, portion coffee bean in right bronchus, 1 day. Physical signs were: marked lagging right chest and wheezing, displacement mediastinal structures to left, and signs of emphysema.

Fig. 7.—Same patient two days after removal of foreign body.

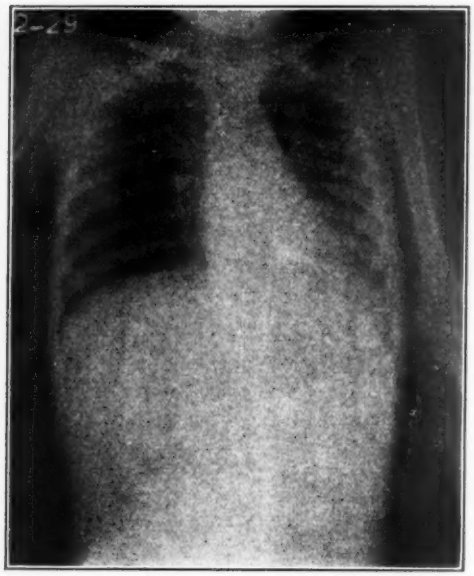

Fig. 8.—Same patient showing left lung perfectly clear 10 days after removal.

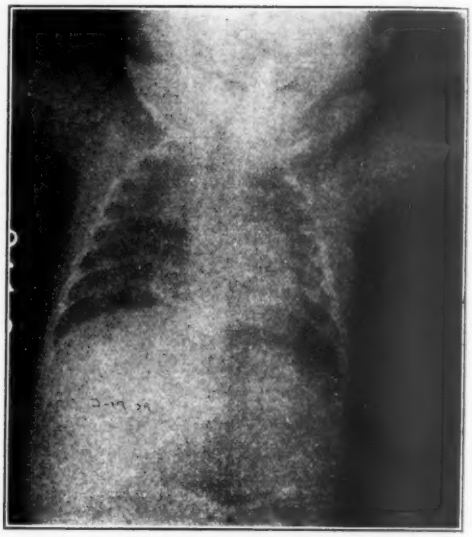

Fig. 10.—Same two days after bronchoscopy, showing lung to be clear.

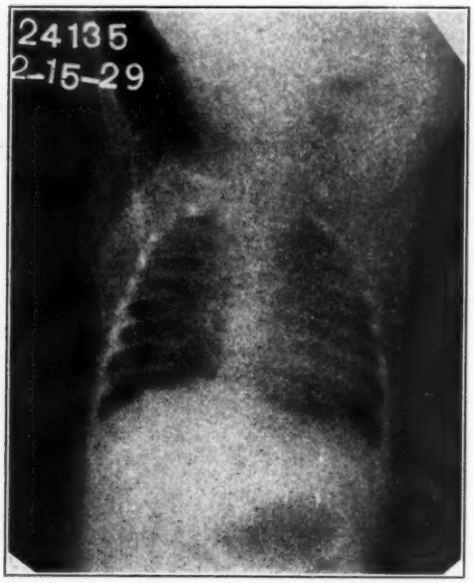

Fig. 9.—Complete obstruction, type 3. Baby, three months, massive collapse left lung, due to mucous plug, dyspnoea 1 day. Physical signs were lagging left chest wall, dullness apex to 6 spine, moist rales on right.

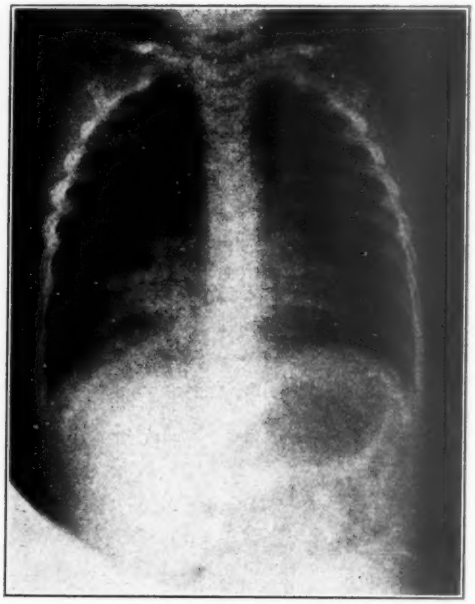

Fig. 11.—Complete obstruction, type 3. Baby sixteen months, watermelon rind in right lower lobe, nine days, with lung suppuration. Physical signs were lagging right chest wall, dullness 4th rib to base, moist rales and wheezing.

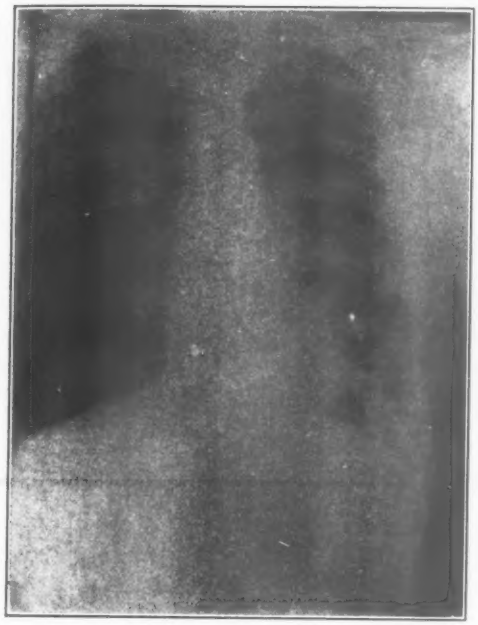

Fig. 12.—Showing advanced pulmonary suppuration and bronchiectasis as a result of inspiration of a peanut 30 years ago.

SUMMARY

(1) The most constant physical signs were lagging of either chest wall and an asthmatoid wheeze.

(2) Cases of bronchial obstruction often simulate pneumothorax, empyema or tuberculosis, on physical examination.

(3) The pictures show the various types of pathological pictures encountered in these cases from clear lung tissue to advanced pulmonary suppuration and bronchiectasis.

(4) For a more complete study of the physical signs of bronchial obstruction the works of Chevalier Jackson and McCrae should be consulted. However, it is hoped that this brief summary will be of some help in the diagnosis of these cases.

DIAGNOSTIC PROBLEMS PECULIAR TO PEDIATRICS, WITH SPECIAL REFERENCE TO CHILD-PARENT PSYCHOLOGY.—CITATION OF ILLUSTRATIVE CASES.*

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The subject of this paper implies a vastness that would be overwhelming should we have for our object the development of its full connotation. In fact, the title might well cause much distress to any conscientious lexicographer engaged in indexing, should he not herewith be apprised that the fulfillment of our purpose shall be in the setting forth of such special situations incident to the making of a diagnosis as have impressed us as being worthy of note in our contact with children. It is hoped, without being too verbose, that a cross-section of a portion of our experience with children and parents in the Public Schools, Infant Welfare Stations, Orphanages, Dispensaries, and in private practice, a field representing strata of most diverse social and intellectual planes, might be drawn upon in the development of our topic.

The procedure necessary in gaining data concerning the child, from which a conclusion as to his physical potentialities may be reached, involves first: the making of the initial contact. This would be interpreted to mean the gaining of the good will of the child and thus his cooperation, if this is at all possible, together with the approbation and support of the parents, grandparents; yes, and as often is the case, the uncles, aunts and cousins. Secondly: the eliciting of significant facts concerning the child's antecedents and events in his own life from birth to date. Thirdly: a thoroughly complete physical examination with a record of data from clinical laboratory examinations. Fourth: the correlating and evaluating of all data previously obtained, with discovery of cause and effect relationships, and finally, the recording of what may not be worthy of a more dignified term than IMPRESSION.

The making of the initial contact, the mode of approach, the gaining of the child's confidence, or what you will, transcends in importance any analogous procedure in work with adults. In fact, with adults very little is necessary except the manifestation of interest on the part of the physician. In words of the commercial world, the adult is sold on the idea of the examination. This, of course, is often far, far from true in the instance of the child. In developing a mode of procedure for this important step toward diagnosis, the following special situations should be recognized: First: The psychological attitude of the average normal parent must be understood. There is a marked degree of centering of in-

*Read before the George Washington University Medical Society.

terest on the part of the parent, in so far as his child is concerned. His child is the only thing that counts, especially when ill. The other relatives share this attitude in varying degrees.

The child psychologically lives in a world far removed from the adult. His is a world of make-believe and imagery. His tractability will vary with his age and his previous training. The parent who manifestedly believes his child a paragon and who unknowingly caters to his own selfish desires by yielding to the child in most everything does not assist in developing the trait of tractability, although by his action he may bring out in the child an individuality of a sort. The household ruled by the youngest child is readily recognized. The parent who as a matter of personal convenience makes a bugaboo out of the physician still exists. A moment's reflection will show what slim chance the newly adopted physician would have ordinarily on his first visit, of escaping a squall, when a stormy scene has preceded his visit and for some breech of discipline the child is told that "the Doctor is going to come to get him for being a bad boy."

How shall we apply this knowledge to gain our objective? First and foremost, the child's name should be promptly learned. He should be ever referred to as "George," "Thomas," or even "Reginald;" never as "Tom," or "Reggie," unless it is seen that the latter are not objectionable. Never should the child or baby be referred to as "IT." A French professor once called my attention to this atrocity which, of course, could never happen in the French language. Remember, always, that the parent is interested essentially in his child, not someone else's child, nor even your own. Never mention, then, the other child in the presence of the parent unless he himself directs the conversation in that direction. The child old enough to know better, it would seem, does much on occasions to bring about loss of poise on the part of the examining physician. Exhibition of anger is fatal. It might be added, parenthetically, that conquering the difficult is always alluring. We can recall some exceedingly bad actors who are now tractile and friendly, and then, again, a minority who were never conquered. The child referred to in the preceding paragraph has, through aiding and abetting by the parent, gained an idea of his own importance far, far in excess of his proper rating; at the slightest discomfort he is overwhelmed with sorrow and concern for himself. The presence of his parent in the room, who is the very embodiment of over-concern, lends encouragement to that acme of unhappiness, self-pity. The tactful removal of the presence of this type of parent frequently brings about an atmosphere of quietude conducive to better cerebration. Aptitude to gain the child's viewpoint, and consequently his good will, is a variable factor among physicians, and we might say people. A willingness to meet the child on his own plane, talking to him about his most cherished toy, which, by the way, is usually the one that shows the most wear and is nearest to the crib, does much towards making an advance. The production from the depths of the bag, the very bag that the child has been eyeing with awe and which he in his fancy has already pictured as containing many objects of torture, of a mechanical puppet will do much toward making "Junior" decide the Doctor is really a good fellow. To gain a comradery, the physician must be sincere and free from guile. A child promptly recognizes deceit and gives it its just due. If the physician cannot accommodate himself to these situations, he should refrain from attempting work with children. If through force of circumstances he finds himself where he must carry-on, use the words of the poet as an invocation, "Make me a child again, just for tonight." It must be remembered that he who gains the child's regard and respect has a valued possession well worthy of the time and energy necessary for its gaining.

In referring to the gathering of facts pertinent to the child's history, it must be remarked that the span of life has been short; consequently, two generations, sometimes representatives of three, immediately preceding the child may be present for interview and observation. This, indeed, is an opportunity rarely afforded in the case of an adult. One often is impressed with the truth contained in the statement, "to modify the physical and mental characteristics of the child, it would be necessary to have selected different grandparents." In passing, the absurdity of expecting a child resulting from a parentage essentially of hyposthenic build, i. e., of the long chest, narrow subcostal angle, elongated thin

extremities, to obtain a gold star at a school where the height, weight, age ratio is checked against the standard, is immediately apparent. On the other hand, there is the child to be examined who has no parents available for interview and there is no one to tell about his immediate antecedents. In this case the adult examination is relatively easier, for the adult usually speaks well for himself. With this child, one may read much of his past from his facial expression and his demeanor. When obtainable, date of birth, weight at birth, difficulties of birth, are recorded. The length of breast feeding, the reason for discontinuance, the type of diet up to the present, are especially important; also, the condition of nutrition, any illness or indisposition, no matter how slight, which has preceded must be inquired into; finally, the chronological events relating to the present illness. It is well to let the child talk, telling in his own words of his pain and any other discomforts. It is also well to get the history from the mother—*not* in the presence of the child. The physician's ears should not be closed to anyone in the household who desires to give information. All should be recorded for final analysis.

The physical examination of the little subject should be thorough and systematic, regardless of success or failure in our attempt previously to gain the confidence and cooperation of the child. Actual restraint with a well applied sheet is required for portions of the examination in the infant and the obstreperous older child. In general, it might be said as to the order of procedure in making the examination, that the examination of the throat, which on no visit should be neglected, may well be made last. If the crying is loud and vociferous, however, the well opened mouth may be taken advantage of at any time, the state of dentition, the mucous membrane of the mouth and appearance of tongue with the odor of the breath and condition of vocal cords estimated at the same time. The degree of consciousness, condition of the fontanelles, the presence or absence of rash, the presence or absence of adenopathy, the condition of nutrition, i. e., weight, height, the prominence of abdomen, any rigidity or spasm of muscles, any evident pain on active or passive movement of a limb, the type of bony structure, should be recorded. The color of the conjunctivae, the size of the pupils, condition of the fundi, the presence or absence of nasal discharge, any blood or odor, should also be noted. The external auditory meatus and canal, the examination of the membrani tympani, and, finally, a rectal examination, all must be subject for our data sheet. The macroscopic character of the stool cannot be neglected. Now, as to our observations on the technique of the above procedures. The examination in a child of the fauces, pharynx and tonsils can sometimes be done well without a tongue depressor or a "tick," as one of my recent little patients seemed to fear and talk of so much. A good light, which should be always carried by the physician, is essential. This light is thrown into the mouth with the tongue well protruded; an inhalation made through the mouth assists. Throat cultures must be taken. Here one may also help his work by understanding child psychology. Telling the child exactly what is going to be done and demonstrating the softness of the cotton swab is required. Where a number of children are to be cultured, careful selection of the one who seems most phlegmatic as the leader, the one least phlegmatic for last seems of much help. Recently I was much pleased when culturing a small group selected from a larger group of five year old runabouts to have those not wanted to fall in line and hopefully look forward to their own culturing. Another point in facilitating the taking of throat cultures is to have the child, if over seven, (if under, his parent or any other individual handy) to extend their fingers with the palms of the hands toward the ground. An ideal test tube rack is thus formed. The tube is slid in between fingers, cotton plug between others. One hand holds the media, the other the tube container of swabs. This gives the child, or the parent, something to do, a diverting concentration. A urinalysis and a red, white, Hb. estimation, with a differential, must be routine. Spinal fluid examinations, Wassermann and other laboratory tests are performed as indicated.

In the evaluation of data gained and carefully recorded, it is necessary to have a working knowledge of the symptoms of certain disease entities, especially of those diseases likely to attack the child. The vagaries of signs and symptoms obtained in examination of the child as contradistinguished from the adult must be understood. Finally, on the ability of the ex-

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aminer, on the one hand, to bring by the process of elimination, from a vast array of symptoms and other information a correspondence to a known disease entity and, on the other, an ability to interpret physical signs directly in terms of pathology, hinges success or failure. It is entirely beyond the scope of this paper to even name all of the conditions and diseases having a specially high incidence in childhood, but we feel constrained to give outlines of a few pertinent cases, about which our experience reveals there exists some confusion at times in their recognition. The vagaries of the signs and symptoms and their interpretation:—Pain in abdomen is often complained of when the child has a sore throat, as pointed out by Bremmermann and others: pain in the abdomen notoriously accompanies pleurisy or pneumonia.

In evaluating physical signs[1] elicited from chest, it is well to bear in mind the gross difference of the child's thorax from that of an adult with the resultant evaluation of physical findings:

Inspection.—Except for general estimation of patient's condition and notation of respiratory rate and character, this is of little value as an early aid.

Palpation.—Tactile fremitus is of doubtful assistance.

Percussion.—In early infancy this is not of great value, as a change of note may often be developed by turning the head from side to side and so putting muscles on stretch. When actual impairment occurs, the pathology is often evident upon applying other means. The interscapular region should never be neglected. Percussion in the older child approximates its value in the adult.

Auscultation.—This is of most importance. One should bear in mind that over an early site of pneumonia there is often marked diminution of breath sounds, with breath sounds harsher than normal on opposite side, leading the inexperienced observer to make a wrong inference as to location of disease. Later on, the breath sounds are quite as typical over areas of consolidation as in adult. It must be observed that normally from perhaps the relatively larger bronchial tree and thin chest wall, the breath sounds in the child are more harsh than found in the adult (puerile breathing). Again, breath sounds are transmitted with considerable clarity through pleuritic effusions. Rales and adventitious sounds of various kinds are transmitted through chest wall with intensity. Indeed, in the bronchitides, rales often produce vibrations which may be readily perceived on palpating chest.

An outline of the essential facts in a brief series of illustrative cases follows:

1. Pyelitis: Infant, female, seen in consultation in January, 1929, Silver Springs, Md.

History: Sore throat, paracentesis of membrana tympani performed by aurist. Temperature ranging as high as 105 degrees per rectum. Chest showed few rales at base of right lung. Urinalysis reported negative (Commercial Laboratory). Right after drop in temperature, urine examined in my office showed trace of albumin, numerous pus cells with clumping. Alkalinization of urine caused a subsidence of temperature. In pyelitis, pus cells occur in urine in showers and in clumps.

2. Scurvy: In consultation I saw baby I. F., age 9 months and 14 days; breast fed 10 weeks, then given artificial food because mother's milk disagreed; at time of visit was getting three pints of milk each day with three tablespoons of Mellin's food. Milk pasteurized. For three weeks had cried when approached. As trouble was mostly in right leg, family physician took child to hospital where X-ray was taken, which was said to be negative by roentgenologist and physician. Nevertheless, a crinolin spica bandage was applied as it was thought there was "something around joint." X-ray seen by me exhibited raggedness of periosteum of femur. Diagnosis, scorbutus. Spica removed; orange juice cured.

3. Hypertrophic Pyloric Stenosis: Baby B. was seen at Florence Crittenden Home. Since birth has vomited; but slight gain in weight, then loss. Examination revealed crying baby with a definite peristaltic wave moving from left to right over upper right quadrant. Stools have been small. Operation by Dr. Paul Putzki. Weight at 6 months was 14 pounds.

4. Megalocolon: M. M., aged 8, female, seen by me at Children's Hospital, was poorly nourished; has an unusually large abdomen with history of prolonged constipation; bowels sometimes not moving for days. In addition, there was a prolonged history of otitis with deafness; and an enlarged spleen. X-ray of abdomen after barium injection showed dilata-

tion of descending portion of colon and transverse colon which is stated by roentgenologist to represent a "developmental condition."

5. Intussusception: Baby 9 months. Seen by me in consultation. History of being ill for three days; constipated, and for last twenty-four hours passing blood. Rectal examination revealed a characteristic mass. Removed to Sibley Hospital for operation. Death.

6. Tuberculous Meningitis: Boy, aged 6 years, seen in consultation. Had a tonsillectomy about ten days preceding. There was a convulsion about 7 A. M., from which he had quite recovered upon my arrival at 8 A. M. An enema was given for constipation. As he had no tendency apparently of further involvement of nervous system, I made a good prognosis, as I understand was done by another pediatrician called in later. Eventually a lumbar puncture revealed evidence of a tuberculous involvement of the meninges. Moral:

1. Convulsions after age of 4 are serious, even if there be but one.

2. Lumbar puncture indicated early.

3. Before a tonsillectomy, rule out, if possible, tracheo-bronchial adenopathy.

In closing, we would like to reiterate that it is necessary to understand child and parent psychology, together with the possession of adaptability on the part of the physician to the conditions existing. The careful systematic recording of facts relating to the history and present illness of child and physical examination, with their later evaluation, is of paramount importance.

We would like to leave the thought that, in dealing with an animate structure which exhibits the marked variability of spirit and impulse as does the child, the obtaining of facts, with their interpretation, can never be reduced to a scientific formula. The practice of medicine, i. e., the practice of pediatrics, is truly an art based on a structure of empirical stuff and, with Lyon,[2] we are of the belief that it is slowly but surely being shifted to a foundation of science.

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BRONCHOGRAM AS AN AID IN DIFFERENTIAL DIAGNOSIS OF PULMONARY LESIONS.*

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and
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Salem, Va.

The purpose of this paper is not to present something new in the use of iodized oil as an aid in the diagnosis of chest conditions, but to give some idea of our experience with its use.

It is a well-known fact that the introduction of a new therapeutic or diagnostic method is usually followed by a wave of popular enthusiasm which leads us far astray and sometimes into difficulties. Often within a comparatively short time the pendulum swings back, and we find those who in the early days were ardent advocates have assumed the role of cautious advisers, because they have experienced the dangers and are in a position to warn others. This is quite typical of the position assumed by men who have used iodized oil for diagnostic purposes.

Ever since the development of the X-ray, clinicians have been introducing opaque substances to outline various soft visci. It was not until 1922 that two Frenchmen, Sicard and Forestier, after many experiments, developed an iodized oil for tracheo-bronchial injection. At the present time there are two principal products on the market, lipiodol, the French composition, and iodumbria, the Danish product. These are practically the same, as each contains about 40 per cent iodine and are highly stable.

Its field of usefulness has not been confined to the chest, but has invaded other specialties. Steinharter and Samuel Brown have used iodized oil with very satisfactory results in Roentgen ray examination of the uterus and Fallopian tubes, but Haselhorst and Odenthal have described several cases in which its use in hysterography has resulted in severe inflammation and temperature reactions. Armour cautions against its promiscuous use in diagnosis and localization of spinal cord compression, although he recognizes certain definite indications where it is of great help.

It is very valuable in chest conditions in giving us a clear-cut rapid diagnosis with a permanent record.

We have used it at Mount Regis to confirm a suspected bronchiectasis; for localization of

*Read before the Roanoke Academy of Medicine.

known abscess; for exclusion of bronchiectasis before thoracoplasty; after thoracplasty with failure to improve; for demarcation of diaphragm when diaphragm is invisible in suspected subphrenic abscess; for stenosis. In addition, it may be used for demonstration of suspected tuberculous cavity, for bronchopleural fistula; for foreign body, and Finikoff uses iodized oil and calcium in treatment of surgical tuberculosis with intramuscular injections.

The Ballons advise against its use in pulmonary tuberculosis of exudative type, and in tuberculous pneumonia, as immediate reactions are sometimes produced and its persistence produces ill effects. It should not be given in those few cases which are sensitive to iodine.

The most accepted ways of administering iodized oil are either with a bronchoscope or direct injection into the trachea after anesthetizing the pharynx. The latter is quick, easy, less hard on the patient, and requires a minimum of equipment. We use this method at Mount Regis. The fauces, pharynx and larynx are anesthetized with a 10 per cent solution of cocaine. With a tube bent to conform to the curve of the posterior portion of tongue, 1 c.c. of a 1 per cent solution of cocaine is instilled into the trachea. The same results can be obtained by spraying a 2 per cent solution into the pharynx while the patient takes a deep breath. A 30 c.c. syringe filled with a warm sterile solution of the French preparation, lipiodol, is connected with the intratracheal tube and injected as quickly as possible. The solution is thick and viscid, and two or three minutes are usually required for the injection. If the anesthesia is good, the patient suffers no discomfort. The patient is tilted to the side within which the lesion is suspected. If a view of the apex of the lung is desired, immediately after the injection the patient is tilted so his head is pointing to the floor at an angle of forty-five degrees and lying on the side to be X-rayed. If a film of both lungs is desired, the patient lies on his back.

The potential dangers of the administration of an iodized oil (lipiodol) into the tracheobronchial tree from the time its administration is begun until its final complete elimination from the body may be tabulated thus:

1. The danger accompanying the anesthetic used, whether local or general.

2. The possibility of large quantities of oil reaching the stomach, especially in the deglutition method.

3. The transport of infective material from the mouth or larynx by the oil into the lung alveoli: this danger is obvious, though probably rare. But if such infective material is carried in, we believe that an antiseptic action cannot be expected from lipiodol.

4. The introduction of lipiodol—a foreign substance—into the tracheobronchial tree generally excites cough both at the time of its administration and after it has reached the bronchi of the second order. This cough may:

(a) Be the means of activating the pathologic process already present in the lung.

(b) Bring about the spread of the lipiodol, carrying with it infected material into healthy alveoli, and so cause the rapid development of a bronchopneumonia.

5. Acting as a foreign substance in the lungs, the oil may:

(a) Bring about a degree of reduction of the vital capacity, by its action as a plug, sufficient to produce more or less respiratory embarrassment.

(b) By this plugging action, and because it floats, it may cause the retention and possible absorption of purulent secretions both in dilated bronchi and alveoli.

(c) Through stasis in that portion of the bronchial tree distal to the block, it may prepare that ground for the development of a fresh infective process.

(d) Subjects the patients to the possibility of iodism.

(e) In tuberculous patients, it may actually bring about a sensitization effect with activation of quiescent disease.

(f) Allow the possibility of adding an acute process of the respiratory tract to the already present pathologic process, either from iodism or from the usual congestive action of iodine, or from the projection of infected sputum through coughing into healthy portions of lung.

We have selected from our series at Mount Regis one or two examples each of several common conditions. X-ray films are shown in the more typical cases.

J. I., age thirty-five, salesman. Admitted February 2, 1927.

C. C. Cough.

P. H. Usual childhood diseases. General health fairly good until 1917, when he was discharged from navy suffering with bronchial

asthma. These attacks appeared every three months and lasted for three weeks at a time. This continued until latter part of 1922, when, due to cough, dyspnea, and increased expectoration, he had to stop work. In 1923, he went to Oteen, N. C. Soon after this he was told that he had developed tuberculosis. In 1924, he returned home as an "arrested" case, and had a tonsillectomy and submucous resection. Returned to North Carolina in 1925, and was discharged the latter part of that year with diagnosis of bronchiectasis.

F. H. Irrelevant.

P. I. In September, 1926, was raising about four ounces of sputum, and became so weak that he was forced to go to bed. The expectoration became more profuse and he was bringing up about twelve ounces in December. He was getting progressively weaker and had to remain in bed all the time. At this time his temperature ranged around 99° and 101°. He was taking two and one-half grains of morphine daily. Entered Mount Regis, February, 1927.

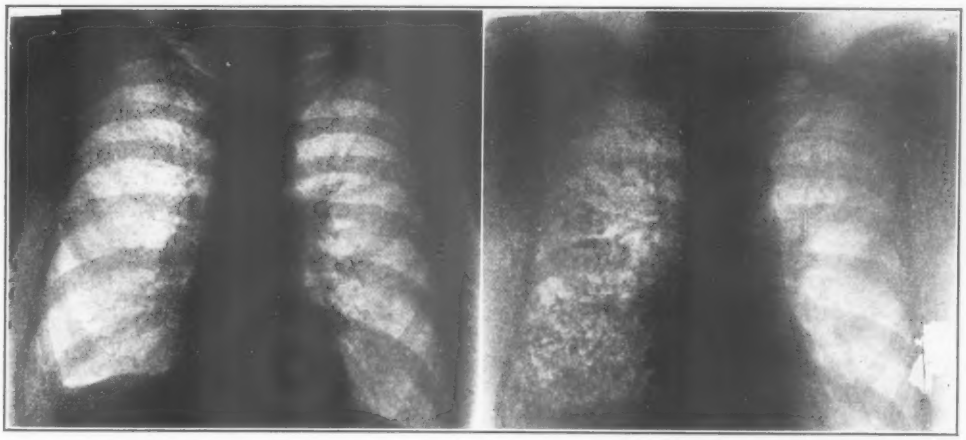

Fig. 1.—Left shows bronchi before the injection of lipiodol. Right shows same thorax following lipiodol injection. Note sacculation of terminal bronchioles.

Physical Examination: Moisture throughout both lungs except at extreme apex. Sonorous and sibilant rales throughout.

X-ray 1461: Marked saccular bronchiectasis most noticeable through the central part of lung. (See Fig. 1.)

The following are cases of abscesses:

C. W., Case No. 1563, female, single, clerk, age twenty-six, admitted August 18, 1926.

C. C. Cough, expectoration, about three ounces of fetid, viscid, purulent sputum every twenty-four hours; pleurisy six months ago; night sweats recently; nervousness, dyspnea.

P. I. Began to feel tired and was easily fatigued in December, 1925. In March developed pleurisy and was given hospital treatment. The severe pain lasted only a week, but patient failed to recover her strength. In April she noticed that she was becoming quite short of breath. At times this became so severe that she was unable to talk in comfort. Her heart would beat fast and cheeks would become flushed. A productive cough appeared at this time, and ten weeks later patient began to have night sweats. This lasted for two months, and at the time of admission she was quite nervous and unable to get the proper amount of rest at night. Would raise about sixteen ounces of purulent material each twenty-four hours; temperature at that time was 104°. Expectoration decreased, however, until she was bringing up only about three ounces.

P. H. Mumps and scarlatina. When eight years of age had some trouble with hip which required a brace for one year. When thirteen years of age hip was operated upon and patient had good recovery and has walked ever since; typhoid fever in 1921, with normal recovery.

F. H. Irrelevant.

Physical Examination: August 25, 1926—Flatness over right base, with cavitation at lower angle of scapula. Stereoscopic X-ray films confirmed suspicion aroused by physical examination in as much as there was a marked

homogeneous density extending from the third rib and sixth dorsal spine to diaphragm, and was of sufficient density to entirely obliterate the diaphragmatic arch. There was no evidence of parenchymatous tuberculosis noted. W. B. C. 15,000. Weight eighty-five pounds.

Artificial pneumothorax was attempted, but was unsuccessful—due to the number of adhesions.

On September 16th a slight bulging was noted at the left base posteriorly which resulted from a needle track infection following attempted artificial pneumothorax, and under local anesthesia eight ounces of fetid pus was evacuated. Her incision closed and it became necessary to open it on two subsequent occasions.

On December 7th, under ethylene anesthesia, an incision was made over sinus and all granulation and scar tissue in lungs dissected out: no ribs removed.

evulsion was advised, although general condition much improved. No temperature. Seventeen pounds gain.

Following phrenic evulsion, there was one and one-half inch elevation of diaphragm, with compression of the lower border of cavity.

Patient discharged October 1, 1927; weight 114¾ pounds. No further trouble.

F. B., Case No. 1670, male, single, miner, age twenty-four, admitted June 30, 1927.

C. C. Constant cough: profuse fetid purulent expectoration of about sixteen ounces daily; loss of weight and appetite; headache; temperature 99° to 100°; dyspnea; constipation.

P. I. Tonsillectomy April, 1926. Aspiration penumonia three weeks later. Duration ten days. One week later temperature again went up and continued for three or four days when he suddenly expectorated "pints or quarts" of fetid pus. X-ray showed abscess.

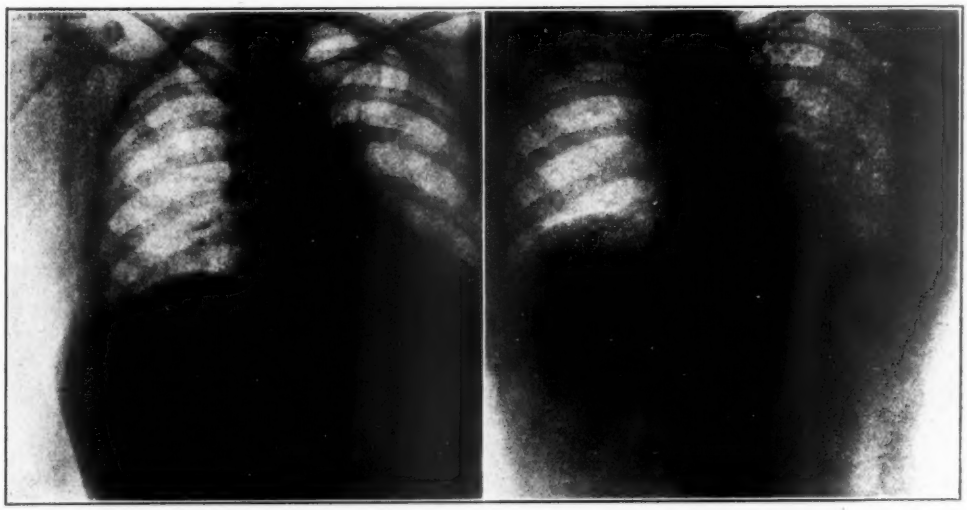

Fig. 2.—Left shows the appearance of chest before lipiodol injection. Right shows appearance of abscess cavity following lipiodol injection. Note cavity as outlined with lipiodol behind the heart shadow.

On February 4, 1927, X-ray film showed base of left lung to be considerably clearer. Lipiodol injection suggested to determine if there was an abscess back of the heart shadow.

Bronchoscopic drainage, aspiration, and injection of lipiodol showed post-cardiac annular shadow, size of lemon (see Fig. 2.) Postural drainage, Alpine lamp, etc., given.

Lipiodol injection on October 5, 1927, showed cavity to be markedly diminished in size. In view of location of abscess, phrenic

Treated for nine weeks and told he was well. In December, 1926, developed a second abscess, and had a third flare-up in March, 1927, after which time he remained in bed, running a temperature of 104°, with cough, sweats, expectoration, etc. Admitted to Mount Regis, June, 1927.

P. H. Poor health until ten years of age. Did outside work and was very healthy from that time until onset of present illness.

F. H. Irrelevant.

Physical Examination: Flatness and absence of breath sounds over right base. W. B. C. 20,000; temperature 100.6°.

X-ray made July 1, 1927, showed a large pulmonary abscess involving lower lobe of right lung.

Bronchoscopic drainage and lipiodol injection on September 20, 1927. Subsequent bronchoscopic treatments resulted in normal temperature, the removal of a large quantity of pus, and improvement in general condition.

Due to cessation of improvement, the eighth and ninth ribs were removed February 16, 1928, and drainage through the chest wall established. Patient failed to improve, and X-ray films taken March 31, 1928, showed the right lung as follows: Mottling throughout the upper lobe. A cavity (about 5 c.m. in diam.), in which there was a fluid level, noted back of second and third ribs and third interspace, using anterior markings. There appeared to be a few bronchiectatic areas extending out from the hilum. There was a somewhat opaque density at base which was sufficiently dense to obliterate the diaphragmatic dome. The trunks in the upper part of this density were well filled with lipiodol and appeared normal. The lipiodol injected into the operative wound was noted low down in front of the ninth and tenth interspaces, using posterior markings.

Patient improved steadily until August 4, 1928, when he developed pneumococcic meningitis and died one day later.

The following are examples of neoplasms:

D. H. Y., age fifty-one, brakeman, admitted November 27, 1926.

C. C. Cough and expectoration since 1912 with exacerbations; hemorrhage June 28, 1926; loss of weight; marked loss of strength; pleurisy in right side; shortness of breath.

P. H. Patient had the usual childhood diseases. Health poor since 1912. Had had bronchial trouble for fourteen years. Had kidney colic in August, 1928. Hay fever each summer. Frequently vomits when he coughs. Hemorrhoids at times. Voids two or three times at night. Exposed to tuberculosis when infant.

F. H. Irrelevant.

P. I. Onset in July, 1926, with hemorrhage. Gradual weakness since that time.

Physical Examination: November 30, 1926. Examination of chest reveals dullness throughout the left lung. The breath sounds are somewhat suppressed over the upper part of the left and absent at base. No rales could be heard either on deep breathing or following the auscultatory cough. Heart negative, second pulmonic accentuated: nose, teeth, pharynx and larynx negative; sputum negative; urine negative; Wassermann negative. Temperature ranged around 99.5° with a very slow pulse.

X-ray at this time showed what we thought to be a malignant neoplasm involving the left lung throughout. The patient made marked improvement for next four months, and diagnosis was changed to non-tuberculous suppurative lesion. Lipiodol injection at this time showed cavities at base and no lipiodol in ascending trunks.

Patient later referred to Cole and Johns. Bronchoscopic examination and lipiodol injection showed angio-sarcoma blocking ascending trunks, complicated by suppurative lesions involving remainder of lung.

H. B., age forty-four, insurance salesman, admitted to Mount Regis for examination May 23, 1921.

C. C. Pleurisy pains in left base.

P. H. In 1915 patient was treated at Battle Creek Sanatorium for gastric disturbance and rheumatism; tonsillectomy at this time. Rheumatism continued for one year. Teeth were X-rayed and one found infected and removed; rheumatism improved. Stomach trouble characterized by nausea, lasting three to six days. Severe pain across upper abdomen always with attacks. Physical examination was negative except for being poorly nourished. Weight 123 pounds. Symptoms continued with remissions, and appendix was removed in March, 1921. Gall-bladder negative. There were several enlarged glands about the neck of the gall-bladder.

F. H. Father died of tuberculosis when patient was six years old.

P. I. Admitted to Mount Regis for examination May 23, 1921, complaining of pleurisy pains at left base. Examination revealed slight impairment of resonance on the right to second rib and spine of scapula, with rather marked impairment of resonance over hilus, posteriorly. W. V. is increased in intensity over this area. No rales could be elicited either on deep breathing or following the auscultatory cough. Left lung negative.

Films taken May 2, 1926, after injection of

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lipiodol into the lower right lobe, showed no evidence of bronchiectasis.

Diagnosis: Bilateral malignant neoplasm.

N. N. P., age fifty-five, farmer.

C. C. Severe cough with copious expectoration; pain in right side; shortness of breath; loss of strength; occasional night sweats.

P. H. Healthy as a child. No childhood diseases remembered. Pneumonia at age of eighteen. Normal recovery. Has always taken colds easily. These usually remained all winter, although they cleared up during the summer. Colds usually accompanied by chills and night sweats. In 1918, had influenza, accompanied by pleurisy, and was sick for six weeks. Five years later had similar attack, and again two years later.

F. H. Irrelevant.

P. I. Present illness began in December, 1926, with pneumonia. This was followed by severe cough and copious expectoration. X-ray examination, 1921, revealed pulmonary abscess at right base. There have been short intervals during which he was free from cough. Expectorates blood frequently. Severe pain in right side at present. Has occasional night sweats. Chills several months ago, but none at present. Appetite capricious; constipated; loss of weight and strength; sleeps very poorly.

Physical Examination: Dullness to percussion throughout right back. Absence of breath sounds over middle and lower lobes. Sonorous and sibilant rales over upper lobe. Left lung negative except for compensatory emphysema. B. P. 110/82; nose septum thickened; teeth poor, slight pyorrhea; tonsils diseased; larynx congested; multiple lipoma over both arms. Wassermann negative; sputum negative for tubercle bacilli; urine showed abundant pus with bacillus coli; W. B. C. 12,000.

Stereoscopic X-ray plates (Fig. 3) showed massive atelectasis of right base, with diaphragm drawn markedly upward; etiology undetermined. Lipiodol injected which showed complete obstruction of trunks to lower part of right lung; could be explained by foreign body, inspissated secretions, or complete stricture. It was our opinion that this stricture was in some way the result of pulmonary abscess. Patient was sent to Dr. Chevalier Jackson and diagnosis of carcinoma was made following bronchoscopy and biopsy.

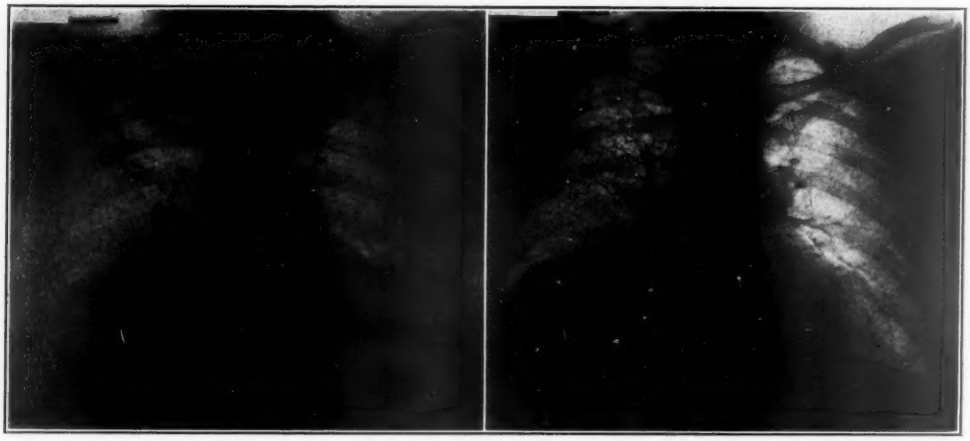

Fig. 3.—Left shows film taken before lipiodol injection. Note elevation of right diaphragm and density at right base. Right shows film taken following injection of 30 c.c. lipiodol. Note complete stenosis of descending trunks on right. Left normal.

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Mt. Regis Sanatorium.

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REGENERATIVE HYPERPLASIA IN EXOPHTHALMIC GOITER: A CONDITION SIMULATING CARCINOMA.*

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In carcinoma of the thyroid gland, the variation in cellular morphology probably is greater than that which occurs in carcinoma of any other organ. Some carcinomas of the thyroid gland, with their fairly well developed columnar epithelium arranged in a papillary manner, resemble to some extent the structure in exophthalmic goiter. These carcinomas, as would be expected, are of a low grade of clinical malignancy. In some instances their cells approach so nearly a differentiated state that they are known to have function, and thereby produce hyperthyroidism similar to that manifested by Plummer's toxic adenoma. Conversely, carcinomas of the thyroid gland may

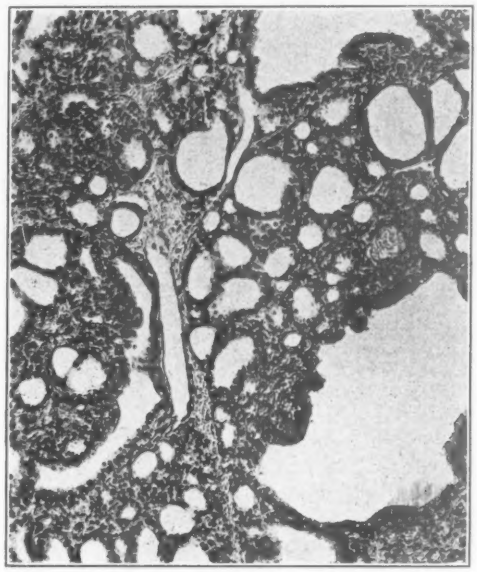

Fig. 1.—Columnar cells of exophthalmic goiter partially replaced by irregular densely staining cells of regenerative hyperplasia.

be composed of cells that are so undifferentiated, and endowed with such marked proliferative energy, that their clinical malignancy is of the very highest grade. To this wide range of cellular morphology in carcinoma of the thyroid gland, in which carcinoma may simulate pathologic processes ranging from benign growths to highly malignant fibrosarcoma or lymphosarcoma, I am adding a condition that I have been observing for a number of years in exophthalmic goiters. In this condition, the microscopic appearance closely simulates that of carcinoma; it is, however, benign. This condition I believe to be a form of regenerative hyperplasia. I am unable to say whether or not it occurs in cases of nontoxic goiter, but so far it has not been observed in them.

The cells in this regenerative hyperplasia vary in size and shape about as much as those that occur in carcinoma of the thyroid gland. In both carcinoma and regenerative hyperplasia of the thyroid gland there is a marked average deviation of the cells from those of the normal gland. Although the smallest cells

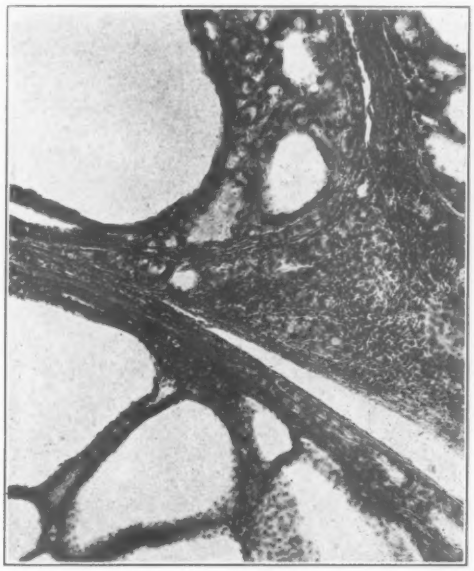

Fig. 2.—Regenerative hyperplasia in follicles of upper half of picture compared with small spherical cells in follicles of lower half. The cells in the lower half are apparently in an inactive state.

in regenerative hyperplasia are about the size of plasma cells, others are very large, simulating in some instances tumor giant cells. Each of these large cells, instead of being multinucleated, has a single nucleus that often appears to be lobulated. Some of the nuclei in regenerative hyperplasia stain palely with hematoxylin, but for the most part there is a tendency for the nuclei to take up an excess of this dye. In contradistinction to the average carcinoma of the thyroid gland, in regenerative hyperplasia, mitotic figures are practically ab-

*Read before the Richmond Academy of Medicine, Richmond, Va., May 28, 1929.

sent and the presence of prominent nucleoli is inconspicuous. These two features, I believe, will enable one to distinguish this condition from carcinoma of the thyroid gland.

When regenerative hyperplasia is detected only by microscopic means, the characteristic appearance may be found in small, scattered areas partially replacing the columnar cells (Figs. 1 and 2), or it may occur throughout the gland, completely replacing the columnar cells (Figs. 3 and 4.) When the cells are found throughout the gland, for the most part the number of cells within a follicle is not markedly

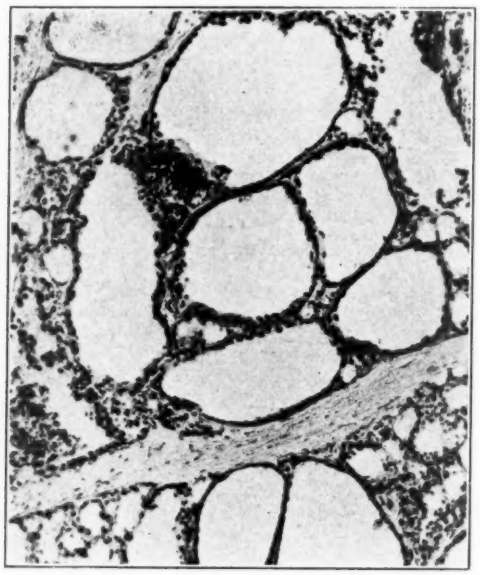

Fig. 3.—Columnar cells of exophthalmic goiter completely replaced by densely staining, irregular cells of regenerative hyperplasia.

in excess of that found in the normal follicle and usually their site is limited to the inner part of the wall of the follicle; they display practically no tendency to fill the center. In this state there appears to be replacement, by regenerative cells, of the columnar cells that are characteristic of exophthalmic goiter, and the gross appearance of the gland is not greatly different from that of the average exophthalmic goiter in which the patient has been given Lugol's solution (compound solution of iodine). MacCallum, in 1907, observed and described these cells in one or two cases of exophthalmic goiter in which the symptoms were especially severe and in which he thought there was widespread desquamation of the epithelium. Their significance to him was not clear. They were also observed by Giordano and Caylor in their histologic study of the effect of ligation of the thyroid vessels in exophthalmic goiter.

In addition to the form that is recognized

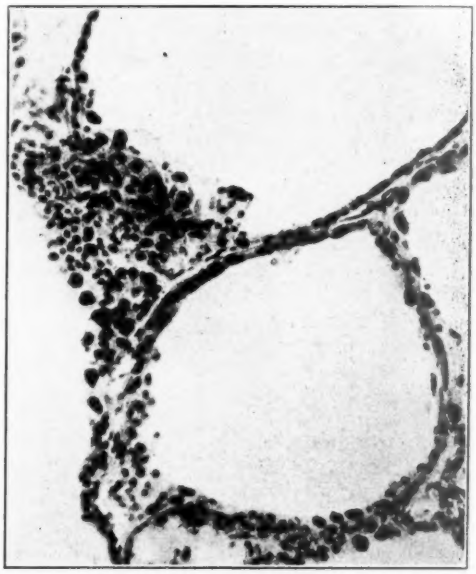

Fig. 4.—Higher magnification of Figure 3.

only on microscopic examination, regenerative hyperplasia may present itself in forms in which it can be recognized grossly. There may be single, yellowish-white, irregular areas about 1 cm. in diameter, or there may be multiple, circumscribed, pale-pink areas which simulate both carcinoma and fetal adenoma and which range from 1 mm. to 2 cm. in diameter. The form in which there is a single yellowish-white irregular area may be seen under the microscope to be in a diffuse, alveolar and acinar arrangement (Fig. 5.) The cells in this form may be deeply stained (Fig. 6) and irregular in shape and size, or they may be spherical and pale staining (Fig. 7.) The form in which there are multiple pale-pink circumscribed areas also may present an alveolar (Fig. 8) and acinar, but not a diffuse, arrangement. The cells in this form may be columnar or spherical, and for the most part pale staining. Moreover, in this form when the cells are in an acinar arrangement there may be a papillary infolding effect like that seen in papillary carcinomas of the thyroid gland and in exophthalmic goiter.

The form that can be recognized grossly by the presence of circumscribed, pale-pink areas bears a resemblance to carcinoma closer than the other form which can be recognized grossly. Whether this form can become transformed into carcinoma, whether it is only the beginning of an adenoma or whether it constitutes the early, developmental stage of an area of parenchymatous hypertrophy characteristic of exophthalmic goiter remains to be seen. It is well to bear in mind that the incidence of carcinoma in diffuse exophthalmic goiter is practically zero, and also that carcinoma rarely is found in adenomas situated in exophthalmic

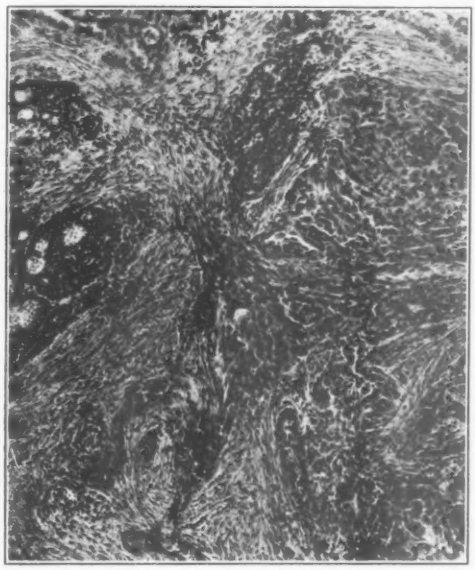

Fig. 5.—Regenerative hyperplasia presenting a diffuse alveolar and acinar effect. Grossly it appeared as a single yellowish-white irregular area.

goiters. Although I have made a diagnosis of carcinoma in exophthalmic goiter on more than one occasion, I am of the opinion that the condition I called carcinoma probably was regenerative hyperplasia, especially in the non-adenomatous cases.

I am reporting nine outstanding cases of regenerative hyperplasia that I have observed at The Mayo Clinic during the last four years in the ordinary routine examination of about 5,000 cases of exophthalmic goiter; the chances are that the incidence will be increased if a detailed examination of each gland is made. It occurred both in cases with a short history of hyperthyroidism and in cases with a long history of hyperthyroidism; also, it was found both in those cases in which the hyperthyroidism developed suddenly and in those in which it developed gradually.

The question arises whether or not in these

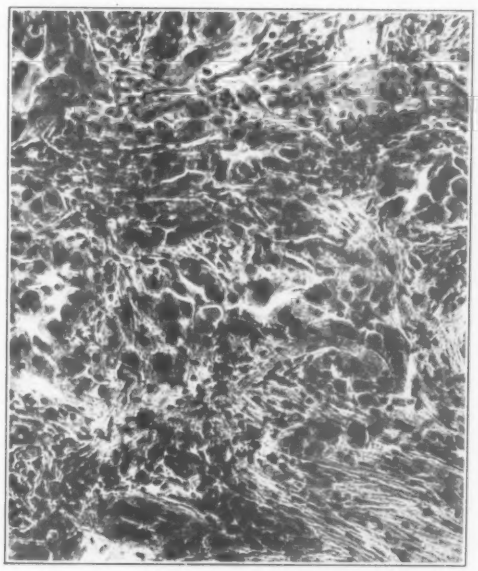

Fig. 6.—Higher magnification of Figure 5. The cells have the same appearance as those of Figures 1, 2, 3 and 4, although the condition in those cases was not grossly recognizable.

Fig. 7.—Pale staining spherical cells presenting both an alveolar and acinar effect. The gross appearance is practically the same as that in Figure 5. There is an associated marked lymphocytic infiltration.

nine cases of regenerative hyperplasia there is any evidence that treatment previous to operation at the Clinic had any influence in causing the hyperplasia to develop. None of the nine patients had undergone operation before entrance to the Clinic. Five had received some preparation of iodine before they had come to the Clinic; one of these five had taken iodized table salt. Of the remaining four patients, one had been given some medicine after exophthalmos had developed but the patient did not know what the medicine contained. Three patients gave a history of not having been given any preparation of iodine before they had been admitted to the Clinic. All nine patients received Lugol's solution at the Clinic, prior to operation. Of the three who had not received iodine before they entered the Clinic, one was given Lugol's solution for seventeen days before operation, and to the other two it was administered for about one month prior

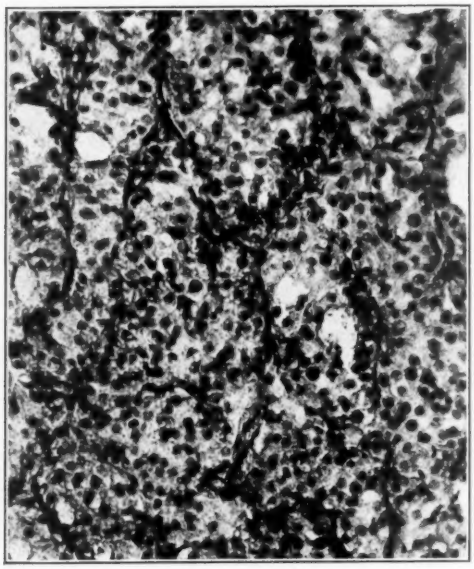

Fig. 8.—Section from a pale-pink circumscribed area showing pale staining spherical cells arranged in alveolar formation.

to the surgical procedures. In addition, before entering the Clinic, the patient who was given Lugol's solution for seventeen days before operation had received treatment for goiter by radium and roentgen rays, and the patient who had been given the medicine of unknown nature after exophthalmos had developed had received treatment for goiter by roentgen rays.

In some of the cases of regenerative hyperplasia, there is a fair to moderate degree of thyroiditis, manifested by lymphocytic infiltration, while in others there is very little. It is safe to say that this peculiar hyperplasia cannot be attributed to treatment by radium or roentgen rays. Thyroiditis, which has increased in incidence in recent years, possibly is a factor in causing regenerative hyperplasia. It is barely possible that the administration of iodine by one or another method is responsible for this hyperplasia. However, this seems unlikely as the condition was observed under the microscope before the use of iodine in treatment of exophthalmic goiter became universal. Furthermore, if iodine is the responsible agent, why is it that the condition so rarely manifests itself at the present time? After considering all possible known factors, I am of the opinion that the cause of this regenerative hyperplasia is problematical.

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DYSTOCIA.*

By M. PIERCE RUCKER, M. D., Richmond, Va.

The subject that you have assigned to me—Difficult Labor—is one that confronts practitioners of medicine all too frequently. It might be divided into two parts (1) mechanical or anatomical, and (2) functional or physiological. In the former belong such labors that are rendered difficult by reason of a contracted pelvis or an over-size child, malposition, obstructing tumors or cicatrices of the cervix. In the latter belong those caused by anomalies in the contraction of the uterus. Those of the former group can be foreseen and usually avoided by prenatal care. Those in the second category cannot be foretold, and are little understood and are therefore an interesting subject for discussion.

For a labor to terminate spontaneously two things are necessary: The cervix must dilate and then after this preparation of the birth canal, the fetus must be expelled. To accomplish the dilatation, rhythmic and orderly contractions of the uterus are necessary. The expulsion of the fetus is brought about by the

*Read before the Manchester Medical Society, May 7, 1929.

continuing effort of the uterus, re-inforced by the action of voluntary muscles, especially the muscles of the anterior abdominal wall and the diaphragm.

A great deal of work has been done upon the contraction of uterine muscle and the various drugs and chemicals that influence it.[1] A strip of uterine muscle has inherent powers of rhythmic contraction, the rhythm varying according to the time in the menstrual cycle. The entire uterus either removed from the body or in situ removed from all nervous connections has been shown to have the power of normal and ordinary contraction. Little work, however, has been done that throws light upon the dilatation of the cervix or upon the nervous control of the uterus. We do not know what causes the cervix to dilate. Is it purely mechanical, the cervical canal being forced open by the wedge-like action of the bag of waters, the so-called hydrostatic wedge, driven by the force of uterine contractions; or does it act like other sphincters of the body, the pylorus, for instance, an active muscular relaxation, if you will excuse an awkward term, fitting in with wave-like contractions of the uterine body? Or is there a combination of these factors? It seems to me that the mechanical explanation is not sufficient. I have a number of hysterograms that show intense uterine action for as much as 36 hours with scarcely any effect upon the cervix. On the other hand, I have seen cervices dilate with scarcely any measurable uterine force.

In the past few years, Knaus[2] has done some interesting experiments upon laboratory animals, which tend to show that as the animal approaches term the uterus undergoes a sort of physiological ripening. For instance, the period of gestation for a rabbit is 32 days. At this time the injection of pituitrin in comparatively small doses causes the expulsion of a live fetus. Before the 29th day, pituitrin in somewhat larger doses will cause the expulsion of the fetuses, but many will be still-born. Before the eighteenth day, pituitrin will not cause the expulsion of the fetuses at all.

To further complicate matters, there is the fact of nervous control. We know that the uterus can act entirely anatomically. Pregnant uteri entirely removed from animals have delivered their contents on the laboratory table. Sir James Y. Simpson[3] showed many years ago that a sow could deliver all but the last of her litter when the spinal cord had been removed. Births have taken place in human beings after transverse lesions in the cord,[4] and there are a number of cases on record of post-mortem spontaneous deliveries.[5] On the other hand, the effect of emotions on labor is well recognized. Every doctor has seen the entrance of a stranger, or the doctor himself, into the lying-in room stop labor pains for a while.

It would seem then that obstetricians have to deal with a hollow muscular viscus, closed by a sphincter-like structure that is capable of anatomically emptying itself of its contents at the proper time, but which is under direct control of the nervous system. Probably there is a dual control, sympathetic or parasympathetic, analogous to the nervous control of the heart. There is also a hormonal control as yet imperfectly understood. Marshall[6] and his co-worker have shown that, in pregnant animals at term, a demonstrable amount of pituitrin can be found in the spinal fluid, but before that time such is not the case.

With this rather sketchy review of the newer facts concerning parturition, let us now consider several types of functional dystocia. First, there is the patient who has exaggerated "false pains". She may be at term according to calculation or she may be just approaching term. I have now a patient who was delivered of her first baby by Cesarean section. Her pelvis is normal. She says that the operation was done because her womb would not dilate. At the end of 24 hours of hard labor it still would not admit one finger. In this connection I would like to report briefly the following case: Mrs. P., age 20. Her pelvis was normal. Physical examination was normal. At about the expected date of confinement she began to have pains, lost some water and had a lot of discharge. She was taken by her doctor to the Retreat for the Sick. Some 36 hours later, I was called in consultation because it was thought that a Cesarean section was necessary. There seemed to be no disproportion, nor was there any dilatation of the cervix. The pains continued and between the entreaties of the patient and the anxiety of her family, her doctor was driven almost to distraction. He begged me to take her off his hands. The patient was given sedatives, sent home and 10 days later fell into real labor and was delivered by version without complications. The baby

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weighed 8½ lbs. and was 53 cm. in length.

The next group are those that seem to have a non-dilatable cervix. This condition is to be distinguished from the stenosed cervix or the cervix that is unyielding because of scar tissue. The cervix becomes thinned out and the external os dilates perhaps a few centimeters and there it stops in spite of intense uterine contractions. Duhrssen's incisions is the best way of relieving such patients. The following case illustrates this type. Mrs. A., age 27, was due, by Naegele's rule, December 28th. Her pelvis was normal as was her general physical examination. Patient entered the hospital December 25th. On December 29th the cervix was effaced but not dilated. A No. 5 Voorhees' bag was placed. She had slight pains but no dilatation and the bag was removed December 30th, at 9 P. M. In the afternoon of December 31st, the patient began to have hard pains. The cervix was very thin. The os admitted three fingers, and its edge felt as if it were made of piano wire. By midnight there was no further dilatation. Three incisions were made, two anterior corresponding in position to 2 and 10 on the face of the watch, and one directly posterior (6 o'clock). Kielland forceps were then applied and an easy extraction was done. The baby weighed 3593 gm. (7 lbs. and 14¾ oz.) and measured 56 cm. The puerperium was uneventful and the mother and child left the hospital on the ninth day in excellent condition.

Finally, there is the contraction rings. There has been a great deal written as to where these rings form. Some have described semi-circular contraction bands in almost every part of the uterus. The ones that I have seen have been situated at the junction of the upper contractile with the lower non-contractile portion of the uterus. The etiology of this anomaly of contraction is not clear. Many have occurred in dry labors, but not a few have occurred before the membranes have ruptured. A well developed contraction ring freezes on to some depression of the fetus, such as at the neck, and effectively prevents further advance or change in the position of the fetus. It resists deep anaesthesia. Cases are on record where at Cesarean section, craniotomy or decapitation[7] was necessary before the head that was below the ring could be delivered. Such advanced cases are fortunately rare, but I believe there are milder types, often unrecognized that cause otherwise unaccountable dystocia. I recall several forceps cases that resisted extraction in a very mysterious manner. There seemed to be no bony obstruction, but after the forceps had been applied I could neither advance the head nor rotate it. A careful examination with the whole hand in the birth canal revealed a contraction ring, and after it had been relaxed extraction was surprisingly easy.

Adrenalin is the physiologic remedy for contraction rings.[8] I discovered this quite accidentally in some work upon sacral anaesthesia. In hysterograms upon patients with sacral anaesthesia, I noticed a marked difference according to whether adrenalin was used with the novocaine or not. If adrenalin be put in the novocaine there is a temporary cessation of uterine contractions, but if the adrenalin be left out of the preparation, the uterine contractions continue uninterruptedly.[9] This action of adrenalin is entirely contrary to what has been taught, but it can be easily demonstrated upon the hysterogram after hypodermic administration. This work with adrenalin was made the subject of a paper that I read before the Southern Medical Association at its New Orleans meeting. At the next meeting of the association, Dr. Pride[10] read a paper upon Contraction Rings and, in the discussion of Dr. Pride's paper, it was suggested that adrenalin ought to be a good thing to relieve the spasm. Clinical experience since then has confirmed this supposition. It is used in 5 minim doses hypodermatically. Theoretically, there is the chance of the contraction of the blood vessels at the site of the injection interfering with the absorption of the drug. If this occurred and the case were sufficiently urgent, it could be used intravenously, but the intravenous route is not without danger.

I recognize that my treatment of the subject has been extremely incomplete and sketchy. My aim has been to present for discussion the types of dystocia that are more apt to be met in general practice. The severer grades of contracted pelves that give so much trouble in obstetrical clinics are rarely met with among pay patients. The dystocia due to postmaturity, now that the public is recognizing the importance of prenatal supervision, is becoming less frequent, but the dystocias due to anomalies of uterine contraction are as fre-

quent as ever. In fact the stress of modern civilization seems to make them more frequent.

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Medical Arts Building.

PARTIAL HYDATID DEGENERATION OF THE PLACENTA LATE IN PREGNANCY.*

Report of a Case.

By FRANK HELVESTINE, JR., M. D., Roanoke, Va.

Hydatid degeneration of the placenta late in pregnancy is a relatively rare occurrence. Findley in 1903, in a series of 210 cases of mole formation collected from the literature, cites a case reported by Potu, of a patient with generalized hydatid degeneration of the placenta who was delivered at term of a normal fetus. Allen (1928) reports two cases, one delivered at seven and a half months and the other at eight with hydatid changes of the placenta and marked edema of the fetus. The following case is very similar to those reported by Allen.

*Read at a meeting of the Roanoke Academy of Medicine on March 4, 1929.

CASE REPORT

The patient is a white multipara twenty-three years of age. Her family history is unimportant and her past history, except for the marital history has no bearing on the present case. The present was her fourth pregnancy. The first pregnancy went to term with the delivery of a normal child but was complicated early by pyelitis. The second pregnancy ended in an abortion at about two months. The third pregnancy was interrupted two weeks before the calculated time of termination with the induction of labor by Watson's method, because of an attack of acute pyelitis. She was delivered of a normal fetus.

Fig. 1.—Photograph showing generalized edema of the fetus.

The first day of her last menstrual period began May 26, 1928, which gave the calculated date of confinement as March 2, 1929. Pregnancy proceeded normally until the middle of September, 1928, when the patient had an attack of cramp-like pains in the lower abdomen, with some bleeding. Under medication and rest in bed, the pains and hemorrhage checked, but over a period of three weeks there was an irregular bloody discharge and several small clots were passed. Examination at this time showed the cervix to be dilated to the extent of 2 cm. in diameter.

Finally, the hemorrhage and pains ceased entirely and the patient had no further trouble until December 20, 1928. At this time she had an attack of abdominal pain principally on the left side. The pain started at the level of the kidney and extended to the pelvis. The patient complained also of severe lumbar backache, and the attack was accompanied by nausea and vomiting. The patient's temperature was normal and examination of the urine showed only an occasional pus cell in the catheterized specimen. Following this attack the abdomen began rapidly to enlarge and the

Fig. 2.—X-ray picture showing degree of edema of the fetus.

patient became very uncomfortable due to pressure symptoms. Backache was persistent. From the middle of January, 1929, until admission to the hospital, the patient was almost constantly in bed and the last few nights before admission she could not sleep even after the administration of hypnotics. She entered the hospital January 28, 1929, in the eighth month of her pregnancy.

Examination showed a rather emaciated white woman, five feet six inches in height. Before pregnancy she weighed 95 pounds. Examination of the head and neck showed nothing of interest. There was no edema of face and no enlargement in the thyroid region. The chest was poorly developed and the breasts pendulous. Examination of the chest showed no lung pathology. The heart was normal in size and there were no irregularities or murmurs. Pulse rate was ninety per minute and systolic blood pressure was 115 mm., while diastolic blood pressure was 80 mm.

The abdomen was tremendously distended by a very tense uterus extending up to the ensiform. The fetal parts could be palpated with difficulty but with no certainty of recognition. Fetal heart sounds could not be heard but the uterine souffle was very plain in the lower abdomen.

Vaginal examination showed the cervix dilated to such an extent that two fingers could be introduced. The presenting part was so high that it could scarcely be palpated. The membranes were bulging.

The extremities showed nothing of interest and the reflexes were normal.

Urine examination showed nothing of note except a few pus cells, and the blood Wassermann done early in pregnancy was negative.

Shortly after admission to the hospital, the patient was prepared and a large Voorhees' bag measuring 10 cm. in diameter was introduced and inflated with sterile water. Traction was made on the end of the bag by a two pound weight hanging over the foot of the bed. Pains commenced immediately and in three hours the bag had passed the cervix. The patient was taken to the delivery room and the bag removed from the vagina. Under chloroform anaesthesia, dilatation soon became complete. Examination showed the occiput to be posterior and to the right. The head was large and on palpation it showed a putty-like consistency.

A version was attempted and although the feet could easily be grapsed, because of the greatly distended abdomen of the fetus and its large head there seemed to be insufficient leverage to turn it. The membranes were, of course, ruptured during this manipulation with the expulsion of at least two gallons of amniotic fluid. Forceps were applied and the head rotated to a position with the occiput anterior and to the left. With small doses of

pituitrin at fifteen to twenty minute intervals to stimulate contractions, the head descended to the midplane where forceps were reapplied and delivery accomplished. Because of the brisk hemorrhage, the placenta was removed manually A second degree laceration of the perineum was repaired. The first two days' post partum were very uncomfortable for the patient and the temperature reached 101° F. but was down to normal the next day and remained so until the patient left the hospital on the fourteenth day.

Examination of the fetus showed a generalized edema; the ascites and the edema of the face and head being most marked.

The placenta was large, about one and a half times the diameter of an average placenta and about twice as thick. The uterine surface was not of the firm consistency as normally seen but had a ragged appearance which on closer inspection showed that it was covered with minute finger-like projections with bulbous ends. These vesiculated villae were small, the largest measuring not over 3 mm. in diameter. The membranes and cord showed no changes of note.

Fig. 3.—Drawing showing microscopic section of the placenta.

Microscopic examination of the placental tissue showed the villae to be enlarged with bulbous ends. The covering epithelium was for the most part intact. The connective tissue stroma was edematous and showed a scarcity of cells. Blood spaces and syncytial elements were only rarely seen and those blood spaces present were engorged with red corpuscles.

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612-613 *MacBain Building.*

A CASE OF CONGENITAL LACK OF DEVELOPMENT OF THE RIGHT HAND.

By DUNLAP P. PENHALLOW, M. D., Washington, D. C.

Cases of arrested or of abnormal development in the human body, while of no particular clinical value, are, however, of interest as showing the changes which may take place when there is either arrested or excessive growth of any part of the body.

Any abnormal change in development is considered as a malformation and according to the classificatin of these abnormalities, as outlined by Hirst and Piersoll[1], these malformations are grouped with regard to their mode of production as follows:

1. Those produced by variations in growth—either excessive or arrested.

2. Those produced by the defective union of component embryonic parts.

3. Those produced by cleavage (either partial or complete) of the primary embryonal cell masses.

Anomalies due to defective growth may be considered under two heads:

A. Those in which a general decrease in size is accompanied by uninterrupted development.

B. Those in which diminution is dependent upon arrested or anomalous development.

The true dwarfs belong to the first group, while the second group includes many various types of malformations exhibiting all degrees of reduction from a rudimentary finger to a shapeless monstrosity.

These various anomalies are also classified by Hirst and Piersoll according to their type, but as the case which will be described later apparently falls into Class 1, that classification alone will be shown.

Class 1. Single Monsters.

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Order 1. Autositic Monsters.

Genus 1.
- Species 1.
  - Phocomelus
  - Hemimelus
  - Micromelus
  - Ectromelus
- Species 2.
  - Symelus
  - Uromelus
  - Sirenomelus

PHOCOMELUS: The distinctive markings in this class are exaggerated shortening and rudimentary development of the long bones of the limbs. The hands and feet may be normal in appearance and appear as though they were attached directly to the shoulders and hips.

HEMIMELUS: In this group the lower portions of the limbs are very ill developed or altogether absent. These are apt to be not so distinctive as are the phocomeli as perhaps but one limb is affected.

MICROMELUS: Limbs are normal in form but are abnormally small.

ECTROMELUS: This signifies an aborted or imperfectly developed limb and there may be present every degree of arrested development from entire absence of the limb to simple shortening. In a typical case of ectromelus there is an entire absence of the limbs. Sometimes small stumps mark the places for the arms and legs. The abnormality may be confind to the upper or to the lower extremities.

Species 2 will not be discussed in detail, but this group is characterized by imperfect development of the pelvis and lower extremities, by more or less intimate fusion of the lower extremities and by twisting of the lower limbs so that the femora are united by the external condyles, the legs by the fibulae, and the feet, if they exist, by the fibular edges and little toes so that the heels look forward.

From the classification and from the description of the different types encountered, the case which is now to be presented falls apparently into Species 1 and in the Hemimelus group.

J. K., a colored laborer, twenty-two years of age, came to the Orthopedic Clinic at Freedmen's Hospital to see if anything could be done to improve the functions or usefulness of his right hand.

Examination: Well developed and nourished colored male. No abnormalities other than the right hand were found. Both arms are equally well developed and measurements taken over the ulnar head show the left wrist to be 6.75 inches in circumference while the right wrist at the same level measures 6.50 inches. The right hand appears as a small rudimentary appendage extending only a short distance below the radiocarpal junction and

Fig. 1.—Dorsal view of both hands. Undeveloped hand on right shows the small rudimentary fingers and thumb with sulci at the end of the fingers in which are small nails.

this appendage is approximately of the same size as is the left wrist. This rudimentary hand is short and thick and presents a rudimentary thumb and four rudimentary fingers. The thumb and each of the fingers are one-half inch in length and apparently have no phalanges, but appear simply as appendages

Fig. 2.—Palmar view of hands showing the rudimentary thumb and fingers.

of skin. At the terminal ends of these fingers and the thumb are small sulci in which can be seen very small rudimentary nails. (Fig. 1.) The skin appears normal on the dorsum of the hand but on the palmar surface it is thickened and slightly calloused. There is

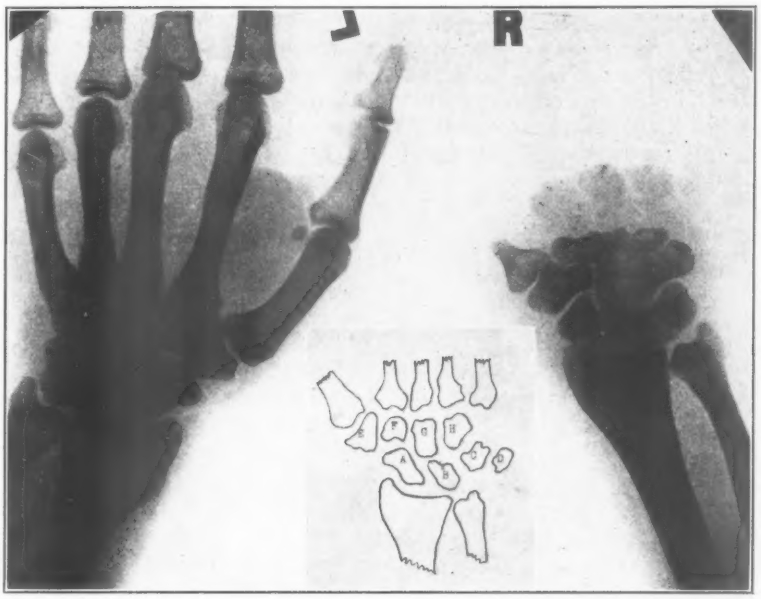

Fig. 3.—X-ray of both hands showing lack of development of the metacarpals and phalanges on the right. On the right only five distinct carpal bones can be made out. The trapezium and trapezoid appear to be fused as do also the os magnum and the unciform. The semilunar and the cuneiform appear as one bone. There is a rudimentary first metacarpal and the heads of the other four metacarpals can be seen. Rudimentary phalanges can be seen at the end of the third and fourth fingers. Insert shows normal carpus for comparison.

Insert: Tracing of normal carpal bones of right wrist for comparison with X-ray.

A. Scaphoid. B. Semilunar. C. Cuneiform.
D. Pisiform. E. Trapezium. F. Trapezoid.
G. Magnum. H. Unciform.

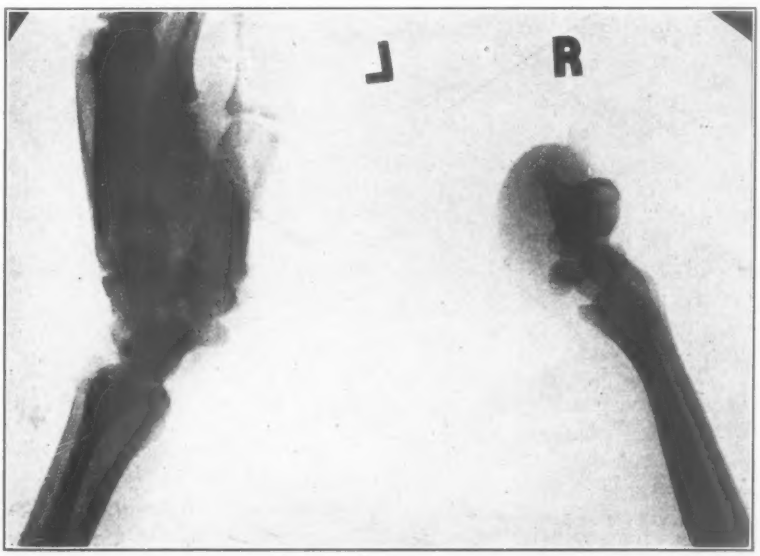

Fig. 4.—Lateral view of same hands.

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what appears to be a small thenar eminence and also a small hypo-thenar eminence but the palmar surface between these two points is somewhat uniformly rounded. (Fig. 2.) There is apparently a small bone at the base of the thumb which resembles a small metacarpal, but there is no mobility of the thumb. There is no power in flexion or extension in the thumb or fingers, but there is slight power of retraction, suggesting that there has been an attempt to form some of the intrinsic muscles of the fingers and hand. No metacarpal bones, other than the one in the thumb, can be felt, and beyond this point the whole hand or appendage is somewhat rounded except for the small skin appendages which resemble fingers. There is good flexion and extension of the rudimentary hand itself.

The X-rays show no differences in the radius and ulnar on either side; the carpal bones on the right are present but show some apparent fusion of some of the bones, or at least an apparent abnormality. There is a rudimentary first metacarpal and the proximal heads of the other four metacarpals are present, but there are no diaphyses and, distal to these proximal heads, no bony structure is noted until the distal end of the rudimentary fingers is reached and at that point small rudimentary bones which seem to be terminal phalanges may be seen not articulating with any other bones. (Figs. 3 and 4.)

No hereditary history could be elicited in this case and the man stated that he knew of no abnormalities, similar or otherwise, in his family or in his antecedents.

This man does laboring work of a kind, but is much handicapped as there is considerable limitation as to what he can do with this defective right hand. He is able to handle a shovel by using the radial surface of the base of the thumb as a support to guide the shovel while using his left hand and one of his feet to push with. There is enough power of adduction between the fourth and fifth stumps to enable him to hold a nail while using a hammer in the left hand. Beyond these limited uses the rudimentary hand serves no useful purpose.

This case is reported simply as a rather unique and interesting type of anomalous development.

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The Farragut, 17th and Eye Streets.

INFECTIOUS DIARRHOEA.*

By SAM WILSON, M. D., Lynchburg, Va.

Exactly one week ago today, I was struck by lightning. Dr. Stover called me over the phone and asked for the title of my address for today. I did not think that I would have to fulfil this duty until next November. Now, gentlemen, I have been struck by many things in my life, but never before had I been hit by lightning. It is no wonder that Dr. Stover had to ask me over the phone "What did you say? What did you say?" I suppose I sounded, to Dr. Stover, not unlike the nocturnal cry of a querulous cat, or the plaintive whine of a crouching setter-dog. When I hung up the receiver, I went into a state of abstraction. When my intellect returned to its seat, I repaired to my files where repose some speeches of the yester-years: some of them made at college in the long forgotten limbo. Out of this long forgotten lore, I hoped to resurrect something that would prove today of practical utility. I found there-among nothing but the trite and the commonplace.

Now I have been an auditor on many occasions to speeches by the past presidents of this society. I distinctly remember that some of them impressed me with their sublimity. I felt that you would expect something that would approximate this past standard—something, the memory of which might stand as a lighthouse along life's uncharted shore. What in the world was I to do in this short time? In this connection, I thought I would write something that would regale the fancy of the South Boston doctors, refine the taste of the Danville doctors or correct the manners of the Lynchburg representatives, but, on second thought, I concluded that the first was useless, the second groundless and the last, hopeless. I asked my wife, what in the world was I to talk about. She replied, "Well if you cant' think of anything else to talk about, just talk about a minute." This poignant piece of piquancy but added to my discomfiture. What was I to talk about. Gentlemen, for at least twenty-four hours, this idea was the ghost at the banquet of my poor thought. I at last thought of something that might appear to you ridiculous. But, as you have been accustomed to the sublime in the past, a condescension to the ridiculous might appear to some of you

*Presidential address delivered before the South Piedmont Medical Society, November 10, 1928.

attractive, so I decided to let you listen in on a soliloquy of mine as I sit by the bedside of a child with infectious diarrhoea, or what is commonly denominated dysentery, and let you overhear what I say to myself as I contemplate the problem before me.

A diaper is before me whereon are the products of inflammation in the form of blood, mucus or, mayhaps, pus. Closely contiguous is a baby with eyes somewhat sunken and cheeks somewhat hollow. How am I going to manage this case? What do I know, and what shall I do? First, I know that it is practically impossible for me to determine what type of organism is causing this disease. I know that there is such a thing as infection from the gas bacillus and allied organisms, as well as infection from the dysentery bacillus and its concomitant invaders, but, for practical purposes, I know I can disabuse my mind of all thought of the gas bacillus, on account of its great infrequency, and can center my entire thought on the dysentery bacillus and its associated invaders, in the identity of the colon bacillus and the streptococcus.

My first thought is, "Shall I purge this child?" I have read somewhere where somebody denied the value of preliminary purgation. I cannot accept this view. I realize, of course, that clearing out the intestinal tract does not remove the organisms that are in the intestinal wall and therefore does not reach the seat of the pathologic process, but I also know that there is a great amount of intestinal detritus in this child, as evidenced by this stool. I know there are products of bacterial metabolism in this child. I know that this intestinal detritus before me consists of shed epithelium and pus, and, futhermore, I know that this detritus presents an ideal feeding ground for the enormous number of organisms found in this stool. Yes, I remember reading where Karl Meyer, in his classic experiments, conclusively proved that, in the presence of the detritus in the dysenteric bowel, the pathologic organisms concerned therein, became more highly active, and took on a more vigorous growth, prducing a large quantity of low grade poison. In view of these remembrances, the situation to me is inescapable. I will purge this baby. I will purge him with the time honored remedy—castor oil. Nothing in my whole armamentarium is comparable to it in point of effectiveness. Nothing sweeps the detritus from the intestinal tract like it does, and nothing is so bland and unirritating. I also realize that two or three ample doses of castor oil in the next week or two will add to the effectiveness of the treatment.

I have purged this baby; now shall I irrigate, and with what? I fully realize that it is impossible for me to use any antiseptic solution in this child's bowels strong enough to have any appreciable action on the intestinal wall or the bacteria therein without running a serious risk of poisoning the baby. However, I remember that many a time have I seen the distressing symptoms of tenesmus associated with a case like this. I know this tenesmus comes from a proctitis, and I know that this proctitis is often induced by excessive acidity of the colon contents, so I will try to forestall this tenesmus. I will irrigate this child with a 10 per cent solution of bicarbonate of soda. I expect the bicarbonate of soda to neutralize the acidity—the neutralization of the acidity preventing the proctitis, and this in turn preventing the tenesmus. So I think it an excellent thing to follow the purgation with a copious high enema of a 10 per cent solution of bicarbonate of soda. I have another object in irrigating this child and that is to cleanse the colon of detritus. I shall not repeat this irrigation more than once in twenty-four hours and, if it disturbs or depresses the child unduly, I will stop it instanter.

I have purged; I have irrigated; now shall I starve this child? Is a period of starvation essential now? May be there has been voluntary starvation for the last day or two, or may be the starvation has already been enforced. If the child has not been starved, I know it is good practice to withhold food for twenty-four hours. I know, of course, that while young children like this patient stand temporary starvation well, they cannot get along without water. I must give this child water forthwith and give it freely throughout this sickness. I know that the alpha and the omega, the very quintessence of the treatment of a case like this, is the supplying of an adequate fluid intake. I know I can give this child plain water sweetened with saccharin, barley water or weak tea. I know that supplying an adequate amount of fluid will be the very sheet anchor of treating this case. If I

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give this child water by mouth and it initiates peristalsis, and increases the number of stools, I will not allow that to intimidate me, certainly not at the present moment.

I know I can minimize this tendency to increased peristalsis by giving the water at body temperature and by incorporating it in an infusion of tea. I am fully alive to the fact that on the morrow the frequent evacuations and loss of fluid by bowel may be so threatening as to force me to withhold water by mouth. I must then be prepared to inject fluid under the skin or into the peritoneal cavity. The use of proctoclysis in this case is out of the question on account of the irritability of the bowel.

I have purged, I have irrigated, I have starved for twenty-four hours, I have considered well the imperativeness of keeping up the fluid balance—now what shall I feed this child? I must try to conserve his strength units and maintain the integrity of his vital organs by proper nourishment. What food may I use with advantage? In this connection, I am cognizant of one thing. I know the dysentery bacillus has a vulnerable spot, and that is his teeth—he has a sweet tooth. He is what, I remember, my professor used to call a facultative organism. I remember that means that he can live on either sugar or protein, but I know he loves sugar and will consume the last grain, trying to satiate himself before he will attack any protein. I also remember that when he eats sugar, he liberates products that are harmless to the child, though at the same time fatal to himself—that is, he produces lactic acid from disintegrating sugar. Lactic acid is an inhibitor of his growth. He cannot live very long in an acid media, so I am going to take advantage of these facts and gormandize him with sugar. While I must start giving carbohydrate at once, I must not expect the symptoms to subside at once. I must be patient because I know that, notwithstanding a carbohydrate diet, the dysentery bacillus will excrete certain endo-toxins which are injurious, and he will form these endotoxins until he is dead. The carbohydrate diet will inhibit his growth and, finally, with the assistance of nature's defensive forces, succeed in exterminating him. What is true of the dysentery bacillus, is also true of the streptococcus. What form of carbohydrate shall I give this child? Lactose milk sugar is preferable because it is broken down more slowly during the process of digestion and is present in the intestinal contents longer and farther down; also, it is claimed, a larger proportion of lactic acid is formed from milk sugar than from any other sugar. I will give him a 5 per cent soluation of milk sugar, frequently repeated. It is better to give it frequently, in small amounts, at short intervals, than in larger amounts at longer intervals, because, in this way, a continuous supply of lactose is is brought to the intestines. In a day or so I will start him on cereal waters, thus continuing the carbohydrate medium, and a little later will give him cereal jellies (arrowroot and barley particularly) and will give him chicken, beef or mutton broth, albumen water and a small quantity of buttermilk. I realize that I must give him some protein inside of a week to prevent excessive protein waste, but I will be very careful not to give so much protein as to neutralize the action of the carbohydrates. I shall be very careful to stay away from potato, on account of the peculiar character of its starch capsule, rendering it difficult of digestion. It has been very often responsible for relapses.

I have purged; I have irrigated; I have starved for twenty-four hours; I have maintained the water balance; I have fed after the scientifically approved method. Now, what drugs are of value to me here? I know that innumerable drugs have been used in the acute stage, most often unwisely. I have used them before in the acute stage and tragedy has followed in its wake. This is one of the many things that I have done in my life that I have since learned was foolish. At this moment, I will not forget the lessons of a regretted past. In the acute stage, I will use nothing but the time-honored remedies, either castor oil or diminutive amounts of calomel: the former is to be preferred. By no means, will I let the giving of drugs divert my mind from more important therapeutic measures.

The thought occurs to me to give this child an intestinal antiseptic; salol is very popular. I do not believe it is possible for me to give this child large enough doses to have any antiseptic action on the pathogenic bacteria without poisoning this baby. But, suppose I can do this; how in the world am I to know that this antiseptic action will not be exerted on

the lactic acid bacilli as well as on the dysentery bacilli? I am very anxious to conserve the life of the bacillus acidophilus and other lactic acid organisms. I know that they are antagonistic to the pathogenic organisms, but, granted that I can give enough intestinal antiseptic to inhibit the growth of the pathogenic organism, why will not its action be exerted on the autogenistic bacilli as well? Reason says that it would, so I will not give an intestinal antiseptic. Then I think of bismuth and how often I have used it before in the subacute stage. It has a wide reputation. Will I use it in the subacute stage with this child? I will, because the best information I can get is to the effect that it acts as an inhibitor of bacterial growth on the intestinal wall, promoting healing and diminishing peristalsis. I also think of giving Dover's powder with this bismuth. The thought occurs to me only to be condemned. I do not mean to condemn the giving of opium, but only the giving of it with any other mixture. It should always be given alone. I know some clinicians vigorously oppose the giving of opium. I know without question that this drug has been more abused than any other drug. I would not entertain for a moment the thought of giving any derivative of opium for dysentery during the stage of intoxication and high fever, but, properly used, it is the most potent weapon I have to check the excessive number of bowel movements in the subacute stage of this disease. It is invaluable to procure rest and to soothe the over-irritated nervous system of this child. I fully realize that no single therapeutic measure, except the maintenance of water balance, is more effective in the treatment of this case than the obtaining of tranquil repose for this child; therefore, I will judiciously use one of the derivatives of opium.

I know, on the doctrine of chances, if I observe these conceptions and stay away from sweet milk in any form for several weeks, I will rescue this child. I will be ever alert for one complication—that is the precursor of impending dissolution, unless I fail to recognize its earmarks. I see in the future this complication that causes me to tremble for the safety of this child. A week or two hence, I see this child with deep rapid breathing, tossing aimlessly to and fro. I know what this means. I know it means forced ventilation of the lungs with impending acidosis. I know it means that the winds of that unknown clime will soon blow across a little face unless I act and act quickly. No treatment will succeed now unless I establish the fluid balance of this child. This is far more important now than the giving of glucose. I must at all hazards restore the blood volume and replace the water loss by the tissues. I will give this child immediately normal saline solution subcutaneously or intra-peritoneally. After I have done this, I will give him an ampoule that I carry with me at all times during the heated term—an ampoule of glucose. I expect I will give it to him concentrated, just as it is, putting it under the skin. I will not dare to put it in the peritoneal cavity. I am mortally afraid of putting anything in the peritoneal cavity except salt solution. I have not always felt this way, for I have provoked some near catastrophies by my bravado, but I thank a kind fate that I have not killed any child by the intra-peritoneal injection of glucose, though I have come dangerously near it. The anxious moments and sleepless hours that have fallen to me as a result of this therapy will not be forgotten. I will give this child from four to eight ounces of normal saline under the skin and will repeat it as soon as the first injection is absorbed. I will watch closely for an increase in the amount of urine, for I know that improvement will begin coincidentally therewith.

SPONTANEOUS FECAL FISTULA THROUGH THE ANTERIOR ABDOMINAL WALL—REPORT OF A CASE.

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Spontaneous perforations of the intestine occur internally and externally. Rupture of intestinal contents through the abdominal wall establishes an external fecal fistula and may result from a number of causes. DaCosta[1] quotes, Senn, and enumerates the causes of this accident as "wounds, injury of the intestines, intestinal ulceration, intestinal strangulation, foreign bodies in the intestinal canal, malignant tumors, actinomycosis, pelvic and abdominal abscess, appendicitis, injury of the bowel during an abdominal operation, the application of ligatures, catching by sutures, and

the employment of drainage tubes." Deaver,[2] in reporting one hundred cases of fecal fistula, claimed that 82 per cent originated from the appendix. Three per cent of his cases were due to strangulated hernia. Haggard,[3] in 1918, reported five cases of fecal fistula following strangulated hernia, and Johnson,[4] in his Surgical Diagnosis, records another case.

The subject of this report was a widow, aged 69, who gave a history of acute peritonitis, operated upon more than thirty years ago. Soon after this operation, an abdominal hernia developed immediately above the transverse line of incision. This quickly attained considerable size. However, a stout abdominal binder kept it satisfactorily reduced. Several years later, vaginal hysterectomy was performed. Persistent vesico-vaginal fistula followed. At the time of her examination, the patient was a rather obese woman with a large ventral hernia, complaining chiefly of weakness and periodic attacks of diarrhea of long duration. Aside from this, she showed little except a blood pressure of 180/100, and a faint trace of albumin in the urine associated with a fair amount of pus.

The patient was followed for two years without noticeable change. She then began to show a temperature varying from 99 to 100 degrees, and a persisting looseness and frequency of the bowels. After three months she had lost considerable weight, and began to complain of abdominal pain. A hard abdominal mass the size of a fist was now first noticed adjacent to the old laparotomy wound, blood occurred in the stool, and it was thought she had a carcinoma of the intestines. She was put to bed and for three more months exhibited distressing diarrhea, abdominal cramps and occasional vomiting spells. Weakness, loss of weight and appetite, and small daily rise of temperature marked the progress of her disease.

Greater abdominal soreness now developed, localized to the right side of the hernia sac, and a red, somewhat indurated area, the size of the hand, appeared. The next day, there was a sudden gush of fecal material through the abdominal wall at this point, and her pain was immediately relieved. At this time, a very small opening, through which gas and fecal material were bubbling, could be made out, but the adjacent abdominal wall was bluish and appeared quite thin. Very shortly, this whole area broke down into a sloughing, gangrenous wound, discharging continuously offensive material. The patient suffered no more pain but gradually grew weaker and, in about six weeks, died.

Autopsy, which was limited to the abdomen, and done after embalming, showed, in addition to the large, purulent excavation in the anterior belly wall, two extensive sloughing sinuses extending under the abdominal wall, one to a position just over the bladder, and the other pointed in the right iliac region.

Ventral hernia with adjacent fistulous opening through abdominal wall.

The hernial sac contained healthy looking intestinal coils bound together by numerous adhesions. One loop of small intestine in the sac connected with the sloughing sinus extending through the abdominal wall. A large, firm, adherent mass filled the pelvis, in which the intestines were incorporated. The ascending, transverse and descending colon were free.

Summary.—A woman of seventy-one, with a long-standing ventral hernia, for six months showed progressive symptoms of fever, diarrhea and abdominal pain, weakness and loss of weight, and a hard, palpable intra-abdominal mass. There was then the sudden occurrence of a spontaneous fecal fistula through the abdominal wall. The autopsy revealed that a gangrenous knuckle of small intestine had probably sloughed through the abdominal

parietes, but not before two other sinuses had begun extensive dissections subcutaneously in the parietal wall.

The case here reported is unusual because of its gradual onset, unaccompanied by the classical signs of severe pain, vomiting and constipation. Diarrhea, which had persisted for six months, was not altered during the few days preceding the perforation; there was no real vomiting, and the pain was no greater than what had been experienced for months. The obstruction which occasioned the gangrene of gut and abdominal wall was evidently slowly progressive, and the clinical picture of an acutely stangulated hernia was completely obscured.

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THE SOCIAL ASPECT OF MENTAL ABNORMALITIES AND THE PROBLEM OF EUGENICS.*

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Under the term of mental abnormalities, I propose to comment briefly upon a very large field of deviation from normal in the psychic sphere. The lowest forms of intellectual development will be considered first. Gradually the higher normal types will be mentioned. Next in order, I will describe the irregular psychic forces in the psychopathic individuals, which manifest themselves in a great variety of abnormal phenomena. Finally, the great problem of insanities, with their causes, will be given due consideration. Such a study will logically lead us to the subject of prophylaxis or prevention of mental abnormalities, and consequently to the problem of eugenics.

In considering all varieties of mental deficiency, we find a long scale, beginning with mental monstrosities and ending with slight feebleness. When the intellectual powers are involved in their entirety, we deal with idiocy. When the arrest of mental development is only incomplete and is, therefore, compatible with the existence of some intellectual manifestations, we deal with imbecility. There are also those in whom only certain powers are likely to reach a degree of development; in whom there is no general, but only partial defect of intellectual powers. For example, one shows a meager power of intellectual acquisition; in another the power of judgment is defective; another is incapable of acquiring elementary mathematical knowledge; in another the power of attention remains very elementary; others show a marked poverty in the power of reasoning, of generalizing, of abstracting, of memorizing, of associating ideas. This category of individuals manifests a conspicuous inequality of development of various intellectual powers. The complete absence of intelligence, of moral conceptions, of sensibility, places an insurmountable obstacle between idiots and the exterior world. Education has no hold on them, impressions leave no trace in them. Instinct alone guides their actions and their relation to others. Their life is reduced to an automatic execution of vegetative function.

In imbecility we find rudiments of intellectual and moral development. The intellectual niveau is somewhat higher than in idiots which, therefore, permits certain acquisitions. With considerable amount of patience, perseverance and ingenuity, one may succeed in training imbeciles in certain moral principles. In spite of all efforts one can expect but a certain degree of mental development in an imbecile. His language remains poor as to the number of words; his articulation is defective; his expression indicates poverty of thought, the character of his acts corresponds to his manner of thinking. In the sphere of morality he exhibits instinctive tendencies of a low order. Cruelty, vanity, gluttony, masturbation, sexual perversion, excesses of all kinds, cowardice, unusual irritability are all characteristic of imbeciles, and these characteristics lead frequently to all sorts of abnormal acts. Theft, arson, brutality, homicide are not uncommon in imbeciles.

Following up the intellectual niveau one step higher than in the imbecile, we enter the domain of the large group of mental feebleness, the study of which is of considerably higher importance from sociological and legal viewpoints than of that of idiocy and imbecility. Here we meet with a great many varieties and sub-varieties, and the transition of one into the other is imperceptible. This is the most important chapter in the study of

*Address delivered before the S. E. Branch of the Philadelphia County Medical Society.

mental deficiency, as the number of such individuals is legion. We find them with us frequently, we deal with them in innumerable transactions, we find them on school benches, as well as in business life. Their relation to the community frequently results in harm. This group presents, speaking generally, a mentality inferior to the normal in quantity and quality. Their intellectual development is both delayed and reduced. The slowness of mental evolution and its lesser amplitude are characteristic. Thus, for example, the intelligence of a boy of twelve resembles that of a child of five.

In view of the enormous influence of intelligence upon the shaping of the normal personality, the resulting moral debility is to be expected. It is a common observation that, apart from idiocy and imbecility, one of the chief characteristics of the feeble-minded is an obtuseness of conscience. The elements of the latter are too feeble in the struggle against passions. It may happen that the mentally deficient has some conception of right or wrong, he may feel that he does wrong, but he does not possess the aversion which would be characteristic of a normal person. The cause of this disorder lies in the incomplete development of moral ideas. The want of judgment, of will, the weakness of character render the moral personality of the feeble-minded unstable, not resistant, and thus they become an easy prey of their passions.

The majority of the symptoms referable to the deviations in the moral sphere gravitate around the ego of the mentally deficient. Thus, the ego becomes extravagantly accentuated. The mentally deficient individuals have no other thoughts but of themselves. Nothing moves them, nothing disturbs them, except their own disturbances, which they immeasurably amplify. Such a psychic orientation naturally leads to a dominating attitude and intolerance. Envy or jealousy is another derivation of egotism. Jealousy creates defiance and doubt; anger and hatred are the next consequence of jealousy. The mentally deficient may develop a hatred towards the dearest and the nearest. As egotism is the predominating characteristic, there is absence of altruistic sentiments.

Among other typical features of mentally deficient individuals may be mentioned impulsive phenomena. They are spontaneous and involuntary psychic manifestations. Normally our acts are controlled by two factors—desire or an impulse for action on one hand, and reasoning on the other. The latter controls and inhibits the former. When the intellect is impaired or defective, the impulse predominates and the desired act is executed, no matter how deleterious it may be; in such cases, we observe frequently sudden impulsive acts in which neither reasoning nor will-power intervene. In some cases the mentally deficient may yet attempt to reflect upon his premeditated act; he may yet appreciate the immorality and criminality of an illegal act, but the appreciation and meditation are not profound enough to overcome the instinctive tendency and the person succumbs to the latter. Morbid impulses may be manifest not only in criminal acts of a gross nature, but in minor acts. The tendency to excesses is commonly observed in these cases.

In mental defectives, besides a certain degree of intellectual inferiority, there is particularly an inherent deficiency of inhibitory power. The whole life of mental defectives is composed of incidents of an instinctive nature, as the instinct predominates in them, and, therefore, their actions are invariably the result of mental activities. The impulses are no more under control of the cerebral centers, which ordinarily regulate our actions; but they exercise their influence on the motor sphere by producing an excessive activity. In such cases naturally there can be no choice of action; each movement is the immediate result of sentiment. The acts are unconscious; they must be executed, because they are out of the field of struggle which normally exists between reasoning and passion. The acts are, therefore, mechanical, automatic, and of a reflex nature.

Besides the mental defectives, there is another class of individuals with abnormal mentality. Although they could not be considered as defective and not as insane in the strict sense of the word, they are, nevertheless, different from normal persons by their power of reasoning, by their sentiments, tastes, sympathies, etc. To this class belong the large category of psychopathic individuals.

Under the term of psychopathy is understood a pathological state of an individual, whose psychophysical resistance is constitutionally diminished; in other words, it is a condition which is a deviation from the normal type of humanity. In such a person

there is an interruption of harmonious equilibrium existing between various functions of cerebrospinal centers; the co-operation and adaptation of these centers are incomplete. There is an ataxia of thought, of sentiment, of will, of psychomotor functions. According to the elements involved, these patients form several groups, which are only apparently different from each other, but under which is hidden the same individuality.

The most important characteristic features in psychopathic persons are found in their psychical sphere. The development of their intellectual faculties is not defective, but irregular, and there is a want of equilibrium in these faculties. Such patients are only partial, incomplete beings. They may have a remarkable memory, but they cannot fix their attention. Their mental instability is sometimes extreme. At the same time they may be eccentric, dreamers, with romantic tendencies. They are emotional, timid, haughty and may be affected with moral perversity of the gravest nature. The best illustration of the loss of psychical equilibrium is found in the psycho-neurotic phenomena, which develop with the greatest facility in psychopathic persons. Among them, obsessions and morbid impulses are the most striking.

What is an obsession? Normally an idea, a sentence, an image may unexpectedly invade our mind and obstinately persist. It is sufficient, then, to exercise our will to a certain extent and make this phenomenon disappear. This, so to speak, physiological obsession, never leads to a morbid impulse. When a morbid obsession occurs, the cerebral centers are involved by a certain image or idea, which remains fixed and suppresses subsequently all antagonistic images or ideas. This is accomplished not without a struggle, but the tenacious idea is accompanied by a moral pain so intense that it subordinates the will, and the individual, perfectly conscious of what is going on, but powerless, finds himself irresistibly forced towards acts of which he himself disapproves. The obsession leads to an impulse, and these two phenomena are in the same relationship as a thought to the act. The following two examples will suffice to illustrate the psychic status of this category of mental abnormalities.

A young woman of thirty-five, who was profoundly psychopathic, whose heredity was the most unfavorable (father syphilitic, mother alcoholic, a grandfather had paresis), had several miscarriages accompanied by tremendous losses of blood. Her recovery was of long duration. Soon there developed morbid impulses. Being a butcher's wife, she assisted him in carving meat in the shop. On several occasions, while handling the large knife, she felt a desire to cut off the customer's head. She realized her condition, she struggled with herself, resisting the torturing temptation. Finally, once, in the presence of several customers, she began to scream; the knife fell out of her hand; trembling she begged them to remove the knife from her sight, as otherwise she would commit murder.

A young pharmacist, who has been under my care for the last two years, has frequently the almost irresistible desire to commit suicide. He is fully conscious of his condition, fights it often at the expense of his sleep. Once riding on a boat he felt the necessity of jumping overboard. Fearing for himself, he begged the passengers to tie him to a post and keep him in this position until the boat landed.

Obsessions and irresistible impulses may affect also crimes of a less important order. In kleptomania there is an irresistible impulse to possess objects which are of no value. This is frequently done by those who are otherwise perfectly honorable, and who possess sufficient means. They are perfectly conscious of the criminality of the act, and of the consequences to which it may lead. They struggle against this tendency; they suffer morally, but they finally succumb to the irresistible impulse. Arson, assault, rape, all varieties of sexual perversion, may be committed by a psychopathic individual under the influence of an obsession.

What is the outlook in obsessions with irresistible impulses? The evolution of these symptoms presents nothing typical. It may be periodical and intermittent. Sometimes it appears for a short period and disappears completely. In other cases it is slow, remains stationary for months and years. In still another series of cases the symptoms disappear, but recur from the least cause. As Magnan has well said, "They are incorporated in the mental state of the individual, and never become separated from him. Appearing now and then during his life, they never undergo modifications: they are always the same."

On the basis of our conception of the subconscious world the phenomena under discus-

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sion find an adequate explanation. The rôle of pathogenetic forces in the causation of psychoneurotic manifestations by the psychanalytic school is pretty well established. As the aim of this contribution is not the psychological aspect of the psychoneuroses but their sociological value, the analysis of the mental processes and of the conflict between the conscious and subconscious ideas which leads to the formation of obsessions and impulsive tendencies and other mental disorders characteristic of psychoneuroses will be omitted.

On the foregoing pages we have discussed psychopathic individuals whose chief characteristic is a strong susceptibility to abnormal mental phenomena. The latter may be not only of the psychoneurotic variety, such as obsessions, anxiety, etc., but also of genuine psychotic type. Such individuals are perpetual candidates (figuratively speaking), for manifestations of a strongly pathological character, and under the influence of potent factors may cross the border line and develop genuine psychoses.

It is not the aim of this address to enter into a full discussion of the very large domain of mental affections, but the intention is to indicate hastily in a few general lines the fundamental disorders which characterize insanities. Our chief object is to lay emphasis on the grave problem of prevention of mental abnormalities of all kinds and to present a general outline of eugenic endeavor.

Psychoses are characterized essentially by disturbances in ideation, in perception, in affectivity, in personality, in consciousness and, finally, in activity. The extent to which each of these elements is involved, the implication of some and the integrity of others, the interrelation between them, the influence of one of them upon the other, are all factors in the formation of the great variety of psychoses. It is not my desire to discuss them from the academic standpoint, as such an attempt will serve no purpose at present.

With these preliminary remarks, let us approach the subject of prevention. Whether we deal with mental deficiency or psychoneuroses or else with psychoses, there is one particular causative element among those mentioned above that stands out prominently, namely, heredity. Statistical and experimental studies, as well as careful clinical observation, prove this irrefutable axiom that an individual invariably bears evidences of tendencies acquired through the germ-plasm of his parents. The character of predisposition is determined by the presence in the spermatic or ovarian cells of concrete hereditary factors which determine the hereditary transmission. Heredity is the cause of the causes. In a study made several years ago, especially from the standpoint of etiological incidents (Proceedings of the American Medico-Psychological Association, April, 1916), the writer was able to arrive at the conclusion that in the outbreak of mental disorders in the form of psychoneuroses or psychoses, etiological incidents of an emotional character immediately preceding them play a conspicuous rôle, since they have a powerful influence on the affectivity and through the latter on the formation of ideational complexes. Mental disorders occur in consequence of factors which are capable to influence the feeling-tone of persons whose mentality is potentially unstable by reason of a hereditary morbid predisposition. In such instances, the exciting element may not necessarily be of a strong character. Even slight emotional occurrences may be the point of departure of psychotic manifestations in a hereditary predisposed individual. In the above mentioned study one finds etiological factors of an affective character. Affectivity is the fundamental basis of the personality. It controls our actions, and, as Bleuler says, we act only under the influence of pain or pleasure and effects produced by them maneuver our logical reflections. A. Godfernaux, in his book, "Le sentiment et pensée" justly remarks that logic of sentiment conforms more to the deep necessities of existence than cold and rational laws of association of ideas; the affective state is the dominating force; the ideas are only its subjects. Yung goes still further by saying that the strongest ideas that have the firmest hold on the personality may be totally inhibited by the effects, and the stronger the effect, the more promptly disturbances will be created in thought and action.

Among the emotional incidents playing a stimulating rôle in the development of psychotic phenomena, the following may be mentioned: Disappointments of various sorts occurring against all expectations, sudden state of anxiety from any source, sudden fright, loss of fortune or of ordinary means of livelihood, sight of mutilated beings, seances of

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hypnotism or of spiritualism, adverse results, unemployment, privation.

Physiological as well as pathological causes may commence a mental disorder, but most frequently in individuals hereditarily predisposed. Persons of a pathological make-up are inevitably prepared to develop psychic disorders at any period of their lives; the soil is there, it is only waiting for an exciting cause such as were mentioned above. Herein lies the problem of prevention of psychic collapse.

In considering the subject of prevention, it is well to bear in mind not only the above described etiological factors, but also some important exogenous causative elements. Mental disturbances may follow infections and intoxications. Syphilis plays a very important rôle. If we consider its effects on the central nervous system with the result of a very large number of cases of tabes, paresis, specific headache, specific palsies of central or peripheral nature, even as far as the third and fourth generation; if we further bear in mind that syphilis may produce various mental phenomena simulating the classical psychoses (see Psychoses Other Than Paresis in Syphilitics, *Journal of American Medical Association*, October, 1917), we will be in possession of facts which belong to the preventable category.

Tuberculosis is another affection which through its toxi-infectious elements exercises a profound influence on the intellectual spheres. It belongs to the preventable class of affections. Alcohol and narcotics produce a deleterious effect on the nervous system and on the intellectual processes. They lead to a progressive mental degeneration, especially in individuals sprung from a neurotic stock. Literature is abundant with examples of this character. (See *Journal of American Medical Association*, 1907, and *Dominion Journal*, 1909). It is therefore evident on what lines our preventive activity is to be carried out.

On the first pages of the present study, particular emphasis was laid on the chief characteristics of mental deficiency. It was pointed out that there is an inherent intellectual inferiority combined with an inherent deficiency of inhibitory power, that the whole life of mental defectives is composed of incidents of an instinctive nature, that their personality is characterized by an incapacity of being influenced, by lack of discretion, by strong criminal propensities, life-long instability, unsociableness, exaggerated self-esteem, vanity, egotism, complete want of ethical or altruistic ideas and impulses, unconsciousness of justice and morality, and that the ethical shortcomings render them useless as members of society.

If one considers the facts that according to the latest statistical investigations only five per cent may prove capable of earning the minimum of maintenance, that a great many after several attempts at becoming wage earners fall back into the class of unemployed, and that mental defectives require life-long control, that such control must be provided by the community—if all these facts are seriously considered, one must admit that the mental deficiency problem is one of the gravest and most difficult social problems. Prevention is the most fundamental solution of the difficulties and it should commence first of all with the consideration of the data supplied by the problem of heredity which has a great deal to do with the development of these defects. Prevention of marriage is indicated for individuals whose family histories reveal the presence of psychotic disorders and whose personal histories reveal the existence of diseases of a degenerative character, such as lues, alcoholism, etc. (see above). Sterilization of mental defectives is the other important measure in our endeavors of combating propagation of unsocial or undesirable species.

From the foregoing remarks we are thus gradually led to the consideration of the principles of eugenics. As the name implies, eugenics means regulation of reproduction of a superior race based fundamentally on the principles of heredity. This can be accomplished by a proper mating of parents who, scientifically investigated, present no conspicuous anatomical or physiological defects. The second eugenical measure in our efforts to preserve a more or less normal community is to interfere with the propagation of the mentally unfit.

That the rôle played by heredity is enormous, all are agreed. It is, therefore, urgent to direct our energies to the prenuptial conditions. Legislation in that direction is essential, but in order to obtain laws which require profound changes in old time customs, it is necessary to alter public opinion. The latter can be accomplished by making the public understand the laws of heredity and the fundamental principles that since the home constitutes an essential element of

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the foundation upon which our social structure has been built, it is important that the elements of the community called "home" possess healthy and normal characteristics. To disseminate this knowledge in the interest of eugenics among the masses, it is advisable to address oneself not only to the mature, but also, and particularly, to the youth during the school age, in order that the latter be qualified to apply this special knowledge to the subject of marriage which is, of course, characteristic of early life. Diffusion of specific knowledge is essential to the progress of eugenics.

The problem of race betterment embraces two fundamental elements of eugenics, namely, the knowledge of the laws of heredity and sterilization of the mentally unfit. The beneficent results of education in that direction are too obvious to dwell upon. Such an enlightenment constitutes the chief if not the only resource upon which dependence may be placed for progress in eugenics. The question naturally arises, how and by whom should this education be carried out? These practical questions are of a sociologic dimension. They require special elaboration and in extensive dimensions.

The object of this address was merely to make a few comments and to call attention to a problem which is extremely vast in its practical applications. To present it in all its ramifications will require a separate volume. I have endeavored to present the subject of mental abnormalities from a practical standpoint. I have succeeded only to give an outline of mental deficiency, of psychoneuroses and of psychoses. My object was solely to emphasize the relationship of the subject to the problem of applied eugenics. Many features of it have not been dilated upon sufficiently for want of time and space.

Many a page could be written on mental hygiene which is a derivative of eugenics. A great deal, for example, could be said of the so-called "nervous child." The latter may not be mentally defective, nor insane, and still present peculiarities of disposition, of temperament, of the mode of thinking, and feeling, all of which denote a special make-up which, under the influence of a more or less great stress later in life, especially at the age of puberty, is likely to undergo a psychic collapse. Here is a great task for the hygienist to undertake, namely, how to proceed in order to bring about the proper development of such a nervous subject from infancy to manhood or womanhood. The hygienist's task is to consider the child's development in infancy, in second childhood, during puberty, during adolescence—otherwise speaking, at different periods of life, each with its special physiological requirements. The future member of the community is the product of proper or improper, of normal or abnormal orientation and utilization of those peculiarities which constitute "the nervous child."

Eugenics, mental hygiene are based upon profound knowledge of physical and psychological forces which control biological units. Recognition in childhood of characteristics which point to mental disorders in the future, the establishment of mental clinics for their early recognition and, therefore, for efforts in prevention, and, finally, the practical application of such a research to the management of delinquency which is intimately connected with and is frequently a direct corollary of mental disorders—are all problems within the scope of our thesis.

If we consider the fact that, at the end of the year 1927, there were in this country approximately 250,000 patients for mental diseases cared for during that year at a cost of $50,000,000, that in the same year one death in twenty-two of the whole adult population in the State of New York occurred in a hospital for the insane; if we consider the fact that there are in the United States at least 500,000 mentally deficient, that each year in this country alone about 500,000 mentally disordered, mentally deficient, or unstable, pass through courts into correctional institutions, if we acknowledge all these facts, the magnitude of the problem is certainly striking. The entire subject in all its ramifications is extremely vast and too extensive for one discourse.

1812 *Spruce Street.*

UNUSUAL CASE OF A GIANT MECKEL'S DIVERTICULUM.*

By JAMES A. CAHILL, JR., M. D., Washington, D. C.

Meckel's diverticulum is one of the uncommon manifestations of the intestinal tract which occasionally presents itself to the clinician or surgeon. The clinician rarely diagnoses it, and the surgeon only finds it in his careful perusal of the peritoneal cavity. It

*Read before the Hippocrates Society, Washington, D. C., May 2, 1929.

has not received the attention that its gravity would seem to warrant.

Knowledge of the existence of Meckel's diverticulum dates back to 1698 when Fridrik Ruysch, the anatomist, spoke of it and illustrated it in 1701. Littre observed it in 1770 when he described an inguinal hernia containing a diverticulum. The first accurate description, however, was made in 1808 by Johann Freidrich Meckel and published in 1809, and named after him for the first time in 1812. It consists of the intra-abdominal portion of vitelline duct which should normally obliterate about the seventh week of fetal life, the atrophy beginning at the distal end and progressing usually until the lumen of the ileum is reached. The factors behind the stimulation or lack of stimulation leading to the obliteration of the vitelline duct are, of course, unknown.

The vitelline duct connects in the early human embryo the umbilical vessel or yoke sac with the mid-gut. The artery and two veins which accompany this duct normally disappear entirely except that portion which becomes the superior mesenteric artery and veins.

The duct and the vessels may persist as a cord attached either to the umbilicus, the abdominal wall, the mesentery or any other organ, or remain free at the outer end, while the intestinal opening is most always at the point on the circumference of the small bowel opposite the mesentery. It is, of course, always single. It may arise from any portion of the small intestine below the duodenum, but the usual location is about 2 to 3 feet above the ileocecal valve and very rarely beyond this. Diverticula of the duodenum and multiple diverticula of the bowel are of an entirely different origin. The diverticulum may have a mesentery of its own. It is possible for the duct itself to be obliterated, leaving the vessels as one fibrous cord, or there may be two separate cords. It is a tiny projection in the wall of the small intestine or a glove-finger-like protrusion of a few centimeters up to 40 centimeters in length. In a case reported by H. H. Moll in the *British Journal of Surgery*, July, 1926, the specimen was 33½ inches in length and was in an infant of five months. In shape, it may be conical, bulbous, hammer-shape, spherical or elliptical. Its walls consist of the normal coats of the small intestine. A number of cases are recorded where true gastric mucosa is present in the diverticulum, and accessory pancreatic tissue has been found. The external anatomical evidence of Meckel's diverticulum may be an unusual puckered umbilical scar with a fistulous opening. As a result of the above embryology and developmental anatomy, the adult possibilities are as follows:

1. A complete canal from the small intestine to the skin surface through which a large or small amount of fecal matter may be discharged.

2. A canal that is open at the umbilical end only.

3. Canal closed at both ends.

4. Canal open at the ileum only, distal end being free or attached by a cord to the abdominal wall.

5. Band or cord consisting of umbilical vessels plus the above canal possibilities.

6. Band or cord only.

Evidence as to the incidence of Meckel's diverticulum is quite variable. Coley and Fortium report 18,000 autopsies that had but 15 instances of Meckel's diverticulum. Balfour reports the finding of Meckel's diverticulum in fifteen of 10,600 laparotomies. The concensus of figures show three males to one female have this congenital anomaly. Munford, in 1914, says that 6 per cent of obstructions are caused by pathological changes in Meckel's diverticulum. This is evidently too high when we consider the many other causes of intestinal obstruction. The age incidence for the development of complications runs from a few days to fifty-eight years. The average age is thirteen years, and 50 per cent of the pathological cases were in patients under ten years. The complications may be grouped, according to Palmer, as:

1. Obstruction due to bands, cords, adhesions, volvulus intussusception, etc.

2. Inflammatory.

3. Hernia into the inguinal or femoral canal.

4. Opening onto the abdominal surface.

5. Perforation of ulcers or foreign bodies.

6. New growths, as myoma or sarcoma.

7. Diverticula associated with other diseases, chiefly acute appendicitis.

Cases of Meckel's diverticulitis are seldom diagnosed as such, due, first, to the relatively small number of cases encountered, and, secondly, to the close resemblance of the symp-

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toms to those associated with perforation, appendicitis, or intestinal obstruction.

The usual symptoms of Meckel's diverticulitis are sudden onset, with a condition that is alarming from the start; tympanites is marked, pain is sharp, the abdominal wall is tense and, unless quickly, relieved, complete intestinal obstruction, fecal vomiting and collapse occur.

Symptomatology.—The symptoms produced by these various pathological conditions may be very variable, presenting different signs according to the form of complication. In a general way, the symptomatic points that might lead one to suspect a Meckel's diverticulum are:

1. The first decade of life, with a possible history of such an anomaly in the family.
2. Frequent attacks of indefinite pain in the abdomen.
3. Vomiting.
4. Umbilical fistula.

These symptoms are merely suggestive and no one or combination of them, aside from the actual findings of a congenital umbilical fistula, can lead to any high percentage of correct diagnoses. The important lesson to be learned from the literature regarding these complications is that they are very serious and the end result in the past has shown a mortality of 75 per cent in the pathological diverticula cases. It behooves us, therefore, not only to be on our guard to the early diagnosis, but alive to the possibilities at operation. All diverticula, no matter how innocent they may be, should be removed providing the patient's condition warrants it. In proportion to their comparative frequency, they are a greater menace than is the appendix.

I wish to present a most interesting case, one which was of paramount importance to me and which shows the possibilities in the acute surgical abdomen of today.

The patient, a school boy, thirteen years of age, a nephew of one of our prominent gynecologists, came under my observation on November 23, 1928. His family history was negative. His previous history was negative except for some indefinite and vague pain in his abdomen for the past several years. However, he had two attacks of what was believed to be appendicitis, recovering from each. Suddenly on the afternoon of November 22, 1928, he was seized with a sharp pain in his lower abdomen. This was accompanied by nausea and vomiting. On the morning of November 23, 1928, he was seen by his uncle, Dr. Mundell, who believed he had an acute appendicitis. Dr. C. C. Marbury was called in consultation. Dr. Marbury concurred and he was sent to Providence Hospital on the afternoon of November 23, 1928. I saw him at 3 P. M. He was well nourished, his temperature was 101, pulse 120, and respiration was 30. His abdomen was flat, symmetrical, and there was marked tenderness in right lower quadrant and also marked rigidity of the right rectus muscle with some slight rigidity of left rectus. No masses were detected. His W. B. C. was 12,000.

A diagnosis of acute appendicitis was made and immediate operation was performed under nitrous-oxide and ether anesthesia. A right rectus incision was made. Upon opening the peritoneal cavity, a very large amount of thin, clear, straw-colored fluid was seen to escape. This was an evident transudate. The appendix was retrocecal, adherent and markedly inflamed. It showed definite evidence of pathology. To account for this fluid, we were led to make a further exploration of the abdominal cavity. The first possibility was that of tubercular peritonitis. No tubercles were detected. In exploration of the pelvic cavity a mass was found and upon delivering this mass into the wound, a definite obstruction was encountered. This obstruction was caused by a large or giant Meckel's diverticulum. The diverticulum itself was about the size of a large orange of a club-shape, and tapering to a broad pedicle which fused with the ileum about fifteen inches from the ileocecal valve. The diverticulum had three tit-like projections or protuberances. From the center or middle projection was attached a thick cord-like band which was about eighteen inches in length and was attached to the small intestine higher up. There was no lumen in this band but there evidently had been one in fetal life. This band made a hammock or sling through which the intestine became tangled. The ileum itself was incarcerated and almost gangrenous. There were many mesenteric glands enlarged. The operation consisted of the appendectomy, a resection of Meckel's diverticulum, and a release of the intestinal obstruction. The diverticulum required resection from both of its intestinal attachments.

The patient left the table in good condition

and made an uneventful recovery. He left the hospital on December 5, 1928, and now has perfectly recovered, with no sequel.

My purpose of considering this unusual condition was many-fold: First, to report a most unusual and interesting case of a giant Meckel's diverticulum; second, to again familiarize ourselves with the possibilities of the surgical abdomen; third, to appreciate the various manifestations of Meckel's diverticulum with the different complications with which it may be associated, and, fourth, to emphasize the necessity of always making an adequate incision which will enable us to make a satisfactory examination of the abdominal viscera. By such routine examination we may inadvertently discover situations which otherwise might not be brought to light. We might then be prepared to deal with them at the time of discovery rather than to wait developments which might necessitate a second operation.

2607 *Connecticut Avenue, Northwest.*

FASCIA TO FASCIA APPOSITION IN HERNIORRHAPHIES.

By PHILIP JACOBSON, M. D., Petersburg, Va.

Noteworthy contributions have been made in recent years concerning the use of living and dead fascial strips in replacing catgut as suture material, especially in herniorrhaphies. That there is a necessity for a change is often disclosed by the fact that failures and recurrences are frequently due to lack of union between the conjoined tendon or the internal oblique and transversalis muscles and the shelf of the inguinal ligament.

Investigators of this problem have attacked it from several angles, chief of which are insufficient or absolute non-union of muscle to fascia and inability of our present suture material to hold the tissues in apposition until sufficient fibrosis and union occur. Such investigation suggests that if fascia to fascia apposition could be satisfactorily accomplished using catgut as a suture material, the difficulties associated with using fascial strips might be considerably lessened and good closures more easily obtained.

E. W. Andrews,[1] first suggested fascia to fascia apposition in herniorrhaphies by advising the suture of the lateral edge of the cut aponeurosis to the inguinal ligament. He also included some of the muscle, but he made no effort to alter the inguinal structures so as to effect a firm union between the aponeurosis of the external oblique and the muscular structures immediately beneath it in an attempt to render these structures more serviceable. The writer has attempted to do this in the manner to be described, but the few cases done, while entirely satisfactory, are not enough to prove the procedure superior to those in vogue at present.

Failure of union of the muscular structures and the inguinal ligament may be considered in several ways: first, muscle-fascia or muscle tendon-fascia union will not occur; second, the suture material is inadequate; and, third, the mechanical factors involved tend to discourage such a union.

Experimental evidence that traumatized muscle will unite with fascia is conclusive and a dissection of a recurrent inguinal or a post-operative hernia cannot but establish the fact clinically. The manner and usefulness of such a union has, however, been in dispute. Seelig and Chouke,[2] after repeating their experiments subsequent to the work of A. R. Koontz,[3] have come to the conclusion that "only under exceptional circumstances will non-traumatized muscle unite with fascia." Koontz and Rosenblatt and Meyers[4] do not distinguish between traumatized and non-traumatized muscle, but it seems that they have experimentally produced firm union between muscle and fascia. Presuming that the union does occur between epimysium and fascia, the result obtained for practical surgical purposes is precisely what is required, and the dispute tends to become of academic interest. Therefore, reasonable traumatization of the muscle may even be desirable. Differences in firmness of the union depend upon the relative amount of fibrous tissue in the muscle, the suture material, the amount of tension present, and the absence of interposed areolar tissue. But even if the union is firm, the action of a muscle cannot be utilized by inserting its edge or even its width into another structure. Muscle must have a sheath disposed so as to gather up the forces of the millions of its constituent fibers and

1. E. W. Andrews, S. G. O., 2:89, 1906.
2. Seelig, M. G., and Chouke, K. S.: Fundamental Factor in Recurrence of Inguinal Hernia. An. Surg., 7:553, Nov., 1923.
Seelig, M. G., and Chouke, H. S.: Fundamental Principles Underlying the Operative Cure of Inguinal Hernia. J. A. M. A., 88:8, Feb. 19, 1927.
3. Koontz, A. R.: Muscle and Fascia Suture with Relation to Hernia Repair. S. G. & O., 42, Feb., 1926.
4. Rosenblatt, M. S., and Meyers, M.: Muscle-Fascia Suture with Preserved Fascia and Tendon. S. G. & O., 47:6, Dec., 1928.

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transmit them through a firm insertion to the structure desired.

Catgut as suture material has certainly been successfully used in laparotomies. Undoubtedly the several layers inserted provide a basis for union that could not be obtained were the same amount of catgut used in one layer as in three, or through and through suture taken through the whole abdominal wall. But the strain is great, especially on the rectus sheath and the amount of catgut used cannot account for the firm closures. Fascia to fascia union must be the basis for the uniformly good results obtained.

Several mechanical factors tend to discourage the union of the muscular structures to the inguinal ligament. The space between these two structures is often quite large and after they are brought together the rectus muscle has a convexity toward the ligament. In addition to the tension created by joining these structures, the convexity of the rectus muscle is reduced every time this muscle contracts and materially increases the tension. Sutures will cut through these tissues under this continual strain. The conjoined tendon is sometimes quite meagre and muscle tissue is present instead. This muscle can easily be drawn over, but it lacks a sheath and, therefore, has nothing to assist it in resisting the intra-abdominal pressure even though its union to the inguinal ligament be quite secure.

Undoubtedly, sutures made of fascial strips, whether alive or dead, have considerable value especially in cases of recurrence or when large defects in the abdominal wall remain after the hernia has been reduced and the sac removed. However, if the structures already present can be rendered more serviceable so that primary recurrences are prevented, then certainly a surgical advantage will have been gained.

It is possible that the medial portion of the aponeurosis may be made to perform a more active part in protecting the inguinal region against recurrence of a hernia. Imbrogation will increase its thickness, but as long as it is above the conjoined tendon, its defense is secondary and not primary. If, however, it is made part of the conjoined tendon and the internal oblique and transveralis muscle by uniting these structures firmly with it and then using the surface of the aponeurosis as the edge of the structure to be sutured to the inguinal ligament, fascia to fascia apposition is obtained and the aponeurosis assumes a primary role in the defense of the hernia. It also provides a sheath having sufficient transverse fibers upon which the underlying muscle may depend for support.

This may be done quite simply. An incision is made in the usual manner, the aponeurosis of the external oblique divided, the sac ligated as high as possible and removed. The under surface of the medial portion of the aponeurosis is then exposed and all the areolar tissue lying upon it is carefully removed as well as that upon the ventral surface and lateral edge of the conjoined tendon. Of course, the shelf of the inguinal ligament and the ventral surface of the aponeurosis are similarly cleaned. I question whether surgical gentleness should be used at this point. This areolar tissue, while very fine, is difficult to remove and I have found that rubbing with dry gauze is the most effective way of getting rid of it. The aponeurosis is then sutured flat upon the muscles by several through and through sutures of chromic catgut. Enough aponeurosis should be left at the edge of the muscles to fold over and under the rounded edge of the muscles where it will be fixed by the sutures attaching it to the inguinal ligament.

The sutures joining the aponeurosis and the underlying muscle are inserted about one-quarter inch lateral to the edge of the sheath of the rectus, pass through the whole muscle thickness and emerge on the aponeurosis about one-half inch lateral to where it started. Four or five sutures usually suffice and they should make the muscular structures and the aponeurosis firmly adherent down to the pubis.

The next step is to suture the muscular structures with its covering of aponeurosis to the shelf of the inguinal ligament. Each suture should pass through the structures as follows: first, through aponeurosis, then through the whole thickness of muscle tissue, and, finally, through aponeurosis again, bringing the lateral edge of the aponeurosis under the muscle. This fixes the edge of the muscle under the aponeurosis and together with the first set of sutures should result in the firm union of these structures. The suture is then carried through the inguinal ligament as in the usual procedure and tied on top of the aponeurosis. By this means a considerable area of the ventral sur-

face of the aponeurosis is brought in apposition with the inguinal ligament. The cord may be disposed either under or over this layer depending upon the nature of the hernia, the lateral fold of the aponeurosis is sutured over the medial fold and the skin closed in the usual manner.

Uniting the aponeurosis of the external oblique with the muscular structures beneath it alters the mechanical forces of the inguinal region after a herniorrhaphy has been performed. The tension between the rectus sheath and the inguinal ligament, which, without the union of these two structures, is carried by the stretched and thinned fibers of the internal oblique and transversalis, is now evenly distributed between the aponeurosis and the structures beneath it, or probably the aponeurosis carries the greater burden. When the aponeurosis is sutured separately to the inguinal ligament, this does not obtain because the muscles having already been sutured in place, the aponeurosis is relaxed when it is attached and carries only a small part of the burden. Thus, while the amount of tension is not changed, the medium through which it is carried is altered and the strain on the muscular structures is much reduced.

The ability of the wall thus formed to resist the intra-abdominal pressure is greater than when these structures are not united. The first structures to meet this pressure are the muscular ones and only after these have been thrust forward does the aponeurosis assume part of the load. Even then its effect is somewhat diminished by the fact that some slipping of the opposed surfaces must occur, modifying the ability of the aponeurosis to be of service. If the structures are firmly united, however, the aponeurosis must assume a primary part in the defense of the hernia as great or greater than the part played by the muscular structures themselves. It will be noted in hernias and in recurrences that the aponeurosis is seldom relaxed, the hernia passing through it rather than carrying it along and that successful closure at the external ring forms a formidable barrier against recurrence.

The possibility of a firmer union between the ventral surface of the aponeurosis and the shelf of the inguinal ligament is certainly greater than the union between the muscle alone and the ligament. In addition, even if the muscles were securely anchored, their elasticity might permit a protrusion sufficiently large to be the starting point of a recurrence.

The amount of fibrosis obtained is probably not as great as when strips of fascia are used. But the loss is compensated by an extra thickness of living fascia at a most vulnerable point and the more adequate defense of the hernia set up by the structures already present. While it is true that the edge of the muscular structures is sutured to fascia, the tension at that junction is so much less and the surface available for fibrosis so much greater that the resulting union cannot help but be of greater service.

When performing the usual herniorrhaphy, my attention has been directed occasionally to the amount of tension existing at the suture line along the inguinal ligament after the muscular structures have been joined to it. This tension is undoubtedly greatly relieved within a few hours after the operation, according to the time required for the tissues to lose some of their elasticity, but, nevertheless, it is a factor which should be considered as tending to discourage the union between the two structures and it is the cause of cutting through of sutures. Of course, there is a similar amount of tension when the above herniorrhaphy is performed, but as the sutures are all placed in fascia there is less tendency to cut through the tissues.

Perhaps it were better if this tension could be minimized before the patient left the table and a point of elasticity provided in the inguinal area. This may be done by undermining the skin over the rectus sheath and making a short longitudinal incision in the sheath near its medial border. A gap about one-quarter inch wide will thus be created, but, as it is well protected by its underlying muscle and as some fascial regeneration will occur during the convalescence, there will be little or no weakening of the abdominal wall at this point.

An objection to this operation may be in the comparatively large amount of catgut used in so small an area. Only in one case was a small amount of serum found, but the blame for this cannot be placed entirely upon the catgut.

The advantages of performing this herniorrhaphy are:

1. Fascia to fascia apposition is obtained.
2. The medial portion of the aponeurosis

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of the external oblique takes a primary part in the defense of the hernia.

3. The tension between the rectus muscle and inguinal ligament is distributed more evenly and through firmer structures.

4. An increased amount of fibrous tissue is formed by the extra layer of aponeurosis inserted between the conjoined tendon and inguinal ligament.

5. The muscular structures acquire a sheath, lose their elasticity, and are held in place by the numerous points of attachment to the overlying aponeurosis.

6. The placing of all sutures in heavy fibrous fissue insures a firmer hold and prevents them from cutting through.

115 *Monroe Street.*

ETHYLENE—THE NEW ANESTHETIC.

By BEATRICE WILSON, Richmond, Va.
Anesthetist of Stuart Circle Hospital.

The history of anesthesia dates back to Helen of Troy and the Talmud, the Jewish Holy Book. From the beginning of history men have been in search of agents that would bring about a state of unconsciousness for a definite period. Ethylene is the latest of the long line of anesthetics.

It was first introduced by a Frenchman named Poggiale, and used by the English surgeon, Thomas Nunnally, as an inhalation anesthetic in 1849. After several years of experimental work it was forgotten, and nitrous oxide and ether held the day.

Then, in 1918, carnation growers had severe losses in shipping their flowers into Chicago because of the fact that, when placed in greenhouses, the flowers would "go to sleep" while the buds—already showing petals—would not open. Crocker and Knight, of the Hull Botanical Laboratory, began to make a study of the effect of illuminating gas on carnations. They found that ethylene forms about 4 per cent of the gas and was the constituent that was causing the toxiciy to flowers. As a result of all this, the question of the toxic effect of ethylene on animals arose, and Dr. A. B. Luckhardt, of Chicago, assisted by J. B. Carter, began experiments on animals—using frogs, white mice and rats, guinea pigs, rabbits, kittens and dogs—which lasted until 1922. Then, on March 11, 1923, at the Presbyterian Hospital, in Chicago, before surgeons and physicians, Dr. Luckhardt and Carter administered the gas to each other. In April, 1923, they reported the first one hundred and six cases operated on under ethylene at the above mentioned hospital, Isabella Herb being the chief anesthetist.

In the meanwhile, not knowing of Luckhardt and Carter's work, W. E. Brown, of Toronto, Canada, discovered ethylene and was making experiments on animals A preliminary account of these experiments was read before the Academy of Medicine in February, 1923, and published in the Canadian Medical Association Journal in March. One week later Luckhardt and Carter published their experiments.

Ethylene or olefiant gas is a colorless gas with a slightly sweetish taste. The chemical formula is C_2H_4. It is somewhat lighter than air. Pure ethylene is solid at below —169.4 degrees Centigrade and boils at —150 degrees Fahrenheit. Anesthetists and doctors seem to disagree as to the description of the odor, and the induction stage is so short that the patients do not remember it. One prominent surgeon describes it as an ethereal odor, others as a sweetish odor. Some doctors compare it to sorghum molasses. As for myself, I can give it but one name and that is garlic.

Ethylene is made by extracting a molecule of water from alcohol. It is a hydrocarbon gas, very inflammable, and explosive when mixed with a high per cent of oxygen and air. It is compressed in steel cylinders and is available for use in the same manner as nitrous oxide.

Ethylene is soluble in the blood and tissues, and passes through the body unchanged. It is a stable gas although not as much so as ether. It is thought to be held in a loose physical combination with the blood plasma.

The advantages of ethylene are as follows:

1. Short, easy induction, free from struggling and suffocation.

2. No cyanosis. More oxygen may be given with ethylene and a healthy color may be had all through the anesthesia.

3. No sweating. The skin is warm and dry throughout the operation, unless the patient is allowed to rebreathe too much. No loss of body heat and fluid.

4. Fewer gas pains afterward. Peristalsis is not interfered with if ethylene is used alone.

5. No interference with mucous membranes of the respiratory tract. It may be adminis-

tered safely in empyema, cardiac and renal cases.

6. No change in blood pressure after the first ten or fifteen minutes. The pulse is slow and even.

7. Muscular relaxation.

8. Quick recovery—two to three minutes, not over six minutes.

9. Less nausea and vomiting. Some cases have none; others empty their gastric contents on the table and do not remember it afterwards; a few cases vomit for a day or more. We must take into consideration the fact that post-operative vomiting may be caused by other factors than that of the anesthetic drug and its administration, such as dread of operation, morphine, trauma during operation, lack of pre-operative preparation. The vomiting is usually projectile in character and there is not the terrible retching and nausea that is seen with the use of ether. In comparing the nausea and vomiting following ethylene, one must be sure to compare cases of the same type. Handling the intestines often causes nausea and vomiting and the anesthetist and the anesthetic drug receive the blame.

The disadvantages of ethylene:

1. *Odor.* Most people at first object to the odor of ethylene. It makes some sick, but after a short period one gets accustomed to it and does not notice it at all. This disadvantage, as far as the patient is concerned, may be overcome by using equal parts of ethylene and oxygen, or by starting the anesthetic with nitrous oxide, as this gas is very pleasant to take, having no odor and renders the patient unconscious very quickly.

2. *Oozing of Blood.* Under ethylene there is a marked increase in the bleeding, especially noticed on making the incision. This is only during the administration and may easily be put up with when considering the great advantages of ethylene. Dr. Robert Friedman, of New York City, suggests the use of adrenalin, 3 to 5 drops in 2 c.c. of saline, injected in the area of operation to minimize oozing.

3. *Inflammability and Explosibility.* This is the most important drawback of ethylene and the one that has so greatly handicapped its use. As is generally known, there have been several explosions from ethylene. The news of such diasters travelled like gossip over the country and greatly prevented ethylene from holding the place it should hold among the anesthetic drugs. All explosions were studied carefully and carelessness was at the bottom of them all. It was found that the mixture of oxygen with nitrous oxide and ethylene forms a very high explosive, but no more so than ether. The danger of explosions may be eliminated if one is careful and uses only a machine made especially for ethylene. The Foregger Metric Machine, with carriage and the large "G" cylinders, is used in Stuart Circle Hospital and is found to be ideal. Great care must be exercised to prevent using matches, lighted cigarettes, cauteries, electric warming apparatus, etc., when administering ethylene. Some experts advise grounding the machine and anesthetist against static sparks. This all depends on the machine used. The best way to avoid explosions is not to get careless and take chances. Carbon dioxide should be run through the machine after using so as to wash out all gases.

Comparison of Ethylene and Nitrous Oxide

In the administration of nitrous oxide and oxygen and ethylene and oxygen, the inductions and recovery stages are rapid. Death in both is caused by asphyxia, respiration ceasing a few minutes before the heart.

Nitrous oxide dissolves readily in the blood plasma, while the changes in the blood during ethylene anesthesia are as yet still unknown. It is thought by some that nitrous oxide changes the blood chemistry somewhat while ethylene does not.

With ethylene-oxygen anesthesia the blood pressure decreases in deep anesthesia and remains constant when it is light. The pulse is slow and even; respiration is quiet and resembles natural sleep. In nitrous oxide and oxygen anesthesia, the pulse and respiration are quickened and fuller. The blood pressure increases.

With nitrous oxide the color is often cyanotic, as the use of oxygen must be minimized. The cyanosis with nitrous oxide is blue or black if there is too much oxygen hunger, while that of ethylene is an ashen grey. With nitrous oxide the skin is moist. The eye signs of both gases are about the same.

The color with ethylene is pink all through the anesthetic. The skin is warm and dry, except in anemic and muscular types. Much

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more oxygen may be given with ethylene without disturbing the anesthetic.

It is thought that there is more nausea and vomiting with ethylene than nitrous oxide. This may be due to the gas in the tank, as one gets more nausea with one tank than with another, due to the impurity of the gas.

Ethylene gives much better relaxation than nitrous oxide but by combining ether in small amounts with either gas, complete relaxation may be obtained. Ether still holds first place when it comes to relaxation of the muscles.

We find more headaches and faintness following nitrous oxide than following ethylene. The vomiting is not quite as severe after the administration of nitrous oxide as it is after ethylene.

Ethylene is a great deal more inflammable and explosive than nitrous oxide. Cauteries and electric equipment may be used with nitrous oxide; they must not be used with ethylene.

When using either nitrous oxide or ethylene for a long period, ice may form on the outside of the tank. This usually means ice on the inside due to the high water content. With nitrous oxide this may be handled by the use of an electric warmer, while with ethylene hot water bags around the top of the tank is the best one can do. Both gases are purer now and the above condition is not often found.

At Stuart Circle Hospital, ethylene has been used since November, 1928. During this time we have given approximately seven hundred ethylene anesthetics. "The Forreger Metric Machine" consists of a carriage with four large "G" cylinders, one of carbon dioxide, one of oxygen, one of ethylene and one of nitrous oxide. The head of the machine consists of a glass jar, containing four glass tubes with a scale back of them for the four gases, emerged in water. Ethylene and nitrous oxide are measured in litres, while oxygen and carbon dioxide are in c.c. Gas pressure is registered on the scale by different colored floaters in the four glass tubes. The ether jar, holding four ounces, hangs beside the scale. One of the nicest things about the machine is the valve that turns pure oxygen under pressure directly into the breathing bag.

We start our patients on nitrous oxide and oxygen until unconscious, then turn to ethylene, giving a mixture of 80 per cent ethylene and 20 per cent oxygen. In the maintenance or surgical stage, we carry our patients on between 4½ and 5 litres of ethylene and 700 to 800 c.c. of oxygen, using small amounts of ether for better relaxation. About 5 per cent carbon dioxide is used to stimulate respiration when necessary.

To give a good gas anesthetic, it is very necessary that there be no food or liquids in the stomach and that the patient be quiet and composed when coming to the operating room. Here morphine plays a big part. The patient should have a hypodermic of morphine, gr. ¼, and atropine, gr. 1/150, at least three-quarters of an hour before operation; better still one hour before.

In all but four of our cases the patients have gone to sleep very quietly and peacefully. Two of these four were men thought to be alcoholic, one was a very nervous woman, and the fourth was a child four years of age.

For the last month we have made a study of the pulse, before, during and after operation. We found in nearly all cases that the rate is very slow during and after operation under ethylene. The blood pressures taken before and after have shown no change, although we have not made a complete study of this.

Oozing of blood has been very marked in all cases.

As yet, we have not been able to use ethylene alone successfully in all types of operations, as some anesthetists have reported. For abdominal work, such as hysterectomies, resections, cholecystectomies, ether vapor, from 1 to 2½ ounces, has been given, but ethylene works beautifully in operations on the extremities, breast amputations, thyroids and simple appendectomies.

Some patients suffered from nausea and vomiting, others did not, but in nearly all cases discomfort lasted only a short time. On visiting the patients the next day, one is pleased to note how well they look and feel.

I feel that ethylene is here to stay, and I hope, by continual observation and study of this gas, to develop eventually a technique that will permit its employment in all cases that come to me for anesthesia.

To labor with zest, and to give of your best,
For the sweetness and joy of the giving,
To help folks along, with a hand and a song,
Why, there's the real sunshine of living.

—*Robert W. Service.*

President's Page

Interest Centers in Charlottesville Meeting, Medical Society of Virginia.

October 22nd to 24th, the time of the next State Medical Society meeting is close at hand. Charlottesville, our meeting place is centrally located, approached by the finest highways from every direction and is easily accessible to every member. The profession of Charlottesville, our host on this occasion, is preparing for a full attendance. Tuesday, exercises incident to the opening of the new medical school building of the University of Virginia will begin early in the morning. Every member is invited to attend these exercises.

The regular program is now in the hands of the printer. Your program committee has exercised its best judgment in its arrangement. Please examine it carefully. It will be noted that a night session is planned for Thursday, the 24th, in order to give every one who is offering a paper a chance to present it. As the session advances, if we find that we are running behind schedule, or if those present desire to eliminate this last night's session, the meeting on Thursday could be split into two sections and enable us to close at the end of the afternoon session as heretofore. Please be thinking about this. This possibility would be in accordance with the By-Laws.

To expedite the handling of the scientific program, it has been decided to commence Wednesday's scientific program at 9 A. M. instead of 10 A. M. as has been the custom for many years. This will necessitate a short over-lapping of the scientific and business sessions, but we hope for a large attendance at both meetngs.

The meeting of the Council is arranged for 3 o'clock and the first meeting of the House of Delegates for 3:30, Tuesday, the 22nd. Members of these two bodies are urged to be on hand promptly. Chairmen of all committees are expected to make reports at the first meeting of the House of Delegates and are urged to have their reports concise and in written form to expedite handling of the business before us. Clinics are arranged for this same afternoon. The conflict here is unavoidable since it is not thought wise to have clinics running during the conduct of the scientific program, and according to the Constitution and By-Laws, the Council and House of Delegates must meet on the first day named for the annual session.

The opening session Tuesday night will be a joint one between our Society and the authorities of the Medical Department of the University.

It will be noted that, as usual, the first number on the Wednesday morning program is Voluntary Case Reports. During the last few sessions, very few case reports have been given. This, in our judgment, should be one of the most interesting features of this session. We urgently hope that every fellow will bear this in mind and at least a goodly number will come prepared to present something of value. In addition, we urge every one to discuss freely any paper in which he is particularly interested as free discussion is essential to the success of every medical meeting.

Dr. William Gerry Morgan, Washington, D. C., President-Elect of the American Medical Association, is to give a short talk before the House of Delegates and also before one of the general sessions. All of our members feel a peculiar interest in Dr. Morgan as he has for some years been a member of our organization and is well known to many of our members.

We are looking forward to a full attendance, full of pep and enthusiasm.

J. Bolling Jones, M. D.,
President, Medical Society of Virginia.

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Proceedings of Societies

The Southwestern Virginia Medical Society

Held its regular semi-annual meeting at Galax, September the 16th and 17th, with Dr. A. M. Showalter, Christiansburg, president, in the chair. According to custom, a banquet was held on the opening evening and this was followed by an interesting program that evening and the following day. Several doctors were admitted to membership. Radford was selected as the place of meeting for the next meeting which is to be held in March, 1930. The following officers were elected: President, Dr. J. Coleman Motley, Abingdon; vice-president, Dr. J. K. Caldwell, Galax; and secretary-treasurer, Dr. E. G. Gill (re-elected), Roanoke.

The Southampton County Medical Society

Held its regular meeting on September the 17th, at which time the following officers were elected for the ensuing year: President, Dr. E. M. Babb, Ivor; vice-president, Dr. A. P. Cutchin, Franklin; and secretary, Dr. W. T. McLemore (re-elected), Courtland. Delegate and alternate were also elected to represent that Society at the Charlottesville meeting of the Medical Society of Virginia.

Loudoun County Medical Society.

The Loudoun County Medical Society recently reorganized and elected Dr. G. Frank Simpson, of Purcellville, as president, and Dr. W. O. Bailey, of Leesburg, as secretary.

The Wise County Medical Society.

Dr. J. D. Willis, Roanoke, Va., was the principal speaker at the August meeting of this Society. He gave a valuable talk on infantile paralysis and brought out a number of new methods in treating this disease which has been so prevalent in Roanoke and vicinity for the past few weeks. A general discussion followed Dr. Willis' talk. Drs. George W. Botts, T. S. Ussery and W. R. Culbertson, of Norton, were appointed a committee to prepare for the entertainment of the Clinch Valley Medical Association in September, for which occasion the Wise County Medical Society was to act as host.

Dr. W. B. Peters, Appalachia, and Dr. W. R. Culbertson, Norton, are president and secretary, respectively, of the Wise County Society.

Fairfax County Medical Society.

This Society held its annual meeting in August, at which time the following officers were elected for the ensuing year: President, Dr. E. C. Shull, Herndon; vice-presidents, Dr. Lyle Mason, Washington, D. C., and Dr. C. A. Ransom, East Falls Church; secretary, Dr. W. P. Caton, Accotink; treasurer, Dr. F. M. Brooks, Fairfax Station. Delegate and alternate were also elected to the Charlottesville meeting.

Fauquier and Loudoun County Societies Hold Joint Meeting.

The annual meeting of Fauquier and Loudoun County Medical Societies was held at the home of Dr. W. O. Bailey, at Aldie, Va., September 26th, at 8:00 P. M. There was an attendance of about 150 people from this section, including all doctors and their wives, dentists, druggists, ministers, registered nurses and their escorts, and a large number of laymen and their wives.

The address of welcome was made by Dr. Bailey and responded to by Drs. G. F. Simpson and W. C. Payne. Dr. W. A. Bloedorn read a paper on "Irregularities of the Heart." Dr. Ennion G. Williams, State Health Commissioner, spoke on the subject of Public Health.

A very interesting and instructive moving picture, on the preparation of biological products, was shown by a representative from Parke, Davis & Company.

Woman's Auxiliary, to the Medical Society of Va.

Program of Annual Meeting.

STATE OFFICERS

President—Mrs. F. W. Upshur, Richmond
President-Elect—Mrs. Edwin J. Nixon, Petersburg
First Vice-President—Mrs. J. W. Preston, Roanoke
Second Vice-President, Mrs. Stuart Michaux, Richmond
Third Vice-President—Mrs. T. W. Edmunds, Danville
Fourth Vice-President—Mrs. M. N. King, Norfolk
Treasurer—Mrs. Wm. B. Porter, Richmond
Secretary—Mrs. Joseph Bear, Richmond

DIRECTORS

Mrs. Southgate Leigh, Norfolk
Mrs. J. Allison Hodges, Richmond
Mrs. H. T. Miller, Washington, D. C

PROGRAM

TUESDAY, OCTOBER 22, 1929

1:00 P. M.

University Luncheon, Memorial Gymnasium. Members of the Woman's Auxiliary are expected to attend.

3:00 P. M.

Executive Board Meeting at Monticello Hotel

WEDNESDAY, OCTOBER 23, 1929

10:00 A. M.

General Meeting at Monticello Hotel

Invocation—Rev. W. R. Mason.
Reading of Minutes of last meeting.
Report of Board meeting.
Report of President.
Report of Secretary.
Report of Treasurer.
Address by Dr. E. A. Alderman, President, University of Virginia.
Report of Delegates to the A. M. A. Auxiliary.
Address—Dr. William Gerry Morgan, Washington, D. C, President-Elect of the American Medical Association.
Address—Mrs. Walter J. Freeman, Philadelphia, Pa., President, Woman's Auxiliary to Medical Society of the State of Pennsylvania.
Report of Standing Committees:
Health Education.
Organization.
Legislative.
State Editor.
Hygeia.
Report of County Presidents and Directors.
Address—Dr. J. Bolling Jones, Petersburg, Va., President of the Medical Society of Virginia.
Address—Dr. Charles R. Grandy, Norfolk, Va., President-Elect of the Medical Society of Virginia.

This general meeting is open to all mothers, wives, sisters, and daughters of doctors, and they are all urged to attend whether or not they are members of the Woman's Auxiliary.

The Executive Board Meeting that is to follow the general meeting on Wednesday will be arranged for later, and the time and place announced at the general meeting.

ENTERTAINMENT FOR LADIES

Tuesday, *October* 22, 1:00 P. M., University Luncheon, Memorial Gymnasium.

Wednesday, *October* 23, 4:30 P. M., Barbecue, Farmington Country Club.

Thursday, *October* 24, 2:30 P. M., Motor Trip including visit to Monticello.

County members please read carefully and, if possible, attend this meeting. We wish to make this year's meeting at Charlottesville a banner one.

Mrs. Stuart Michaux and Mrs. Southgate Leigh have been appointed delegates from Virginia to the Woman's Auxiliary of the Southern Medical Association in Miami, Fla.

The Truth About Medicine

In addition to the articles enumerated in our letter of July 29, the following have been accepted:

Abbott Laboratories
Abbott's Viosterol Cod Liver Oil
Ciba Co., Inc.
Atoquinol—Ciba
Vioform—Ciba
Eli Lilly & Co.
Inhalant Ephedrine (Plain)—Lilly
Hypodermic Tablets Ephedrine Hydrochloride—Lilly 0.016 Gm (¼ grain)
Hypodermic Tablets Ephedrine Hydrochloride—Lilly, 0.0325 Gm. (½ grain)
Hypodermic Tablets Ephedrine Sulphate—Lilly, 0.016 Gm. (¼ grain)
Hypodermic Tablets Ephedrine Sulphate—Lilly, 0.0325 Gm. (½ grain)
Lilly's Ephedrine Jelly
Ointment Ephedrine Compound
Syrup No. 110, Ephedrine Sulphate
Syrup No. 111, Ephedrine Sulphate
Mead Johnson & Co.
Mead's Powdered Lactic Acid Milk, Non-Curdling No. 1, with Dextrose.

NEW AND NON-OFFICIAL REMEDIES

Inhalant Ephedrine (Plain)—Lilly.—A solution containing ephedrine—Lilly (New and Non-official Remedies, 1929, p. 166) 1 Gm.; cottonseed oil, 1 Gm.; perfumed and tinted, liquid petrolatum to make 100 c.c. Eli Lilly & Co., Indianapolis.

Hypodermic Tablets Ephedrine Hydrochloride—Lilly, 0.016 Gm. (¼ grain)—Each tablet contains ephedrine hydrochloride—Lilly (New and Non-official Remedies, 1929, p. 168), 0.016 Gm. Eli Lilly & Co., Indianapolis.

Hypodermic Tablets Ephedrine Hydrochloride—Lilly, 0.0325 Gm. (½ grain).—Each tablet contains ephedrine hydrochloride—Lilly (New and Non-official Remedies, 1929, p. 168), 0.0325 Gm. Eli Lilly & Co., Indianapolis.

Hypodermic Tablets Ephedrine Sulphate—Lilly, 0.016 Gm. (¼ grain)—Each tablet contains ephedrine sulphate—Lilly (New and Non-official Remedies, 1929, p. 169), 0.016 Gm. Eli Lilly & Co., Indianapolis.

Hypodermic Tablets Ephedrine Sulphate—Lilly, 0.0325 Gm. (½ grain)—Each tablet contains ephedrine sulphate—Lilly (New and Non-official Remedies, 1929, p. 169), 0.0325 Gm. Eli Lilly & Co., Indianapolis.

Syrup No. 110—Ephedrine Sulphate—It contains ephedrine sulphate—Lilly (New and Non-official Remedies, 1929, p. 169), 0.22 Gm., in 100 c.c. (1 grain per fluidounce) and alcohol 12 per cent; flavored and tinted. Eli Lilly & Co., Indianapolis.

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Syrup No. 111, Ephedrine Sulphate—It contains ephedrine sulphate—Lilly (New and Non-official Remedies, 1929, p. 169), 0.44 Gm., in 100 c.c. (2 grains per fluidounce), alcohol 12 per cent; flavored and tinted. Eli Lilly & Co., Indianapolis.

Neocinchophen—B. P. C.—A brand of neocinchophen.—N. N. R. For a discussion of the actions, uses and dosage, see New and Non-official Remedies, 1929, p 114. Benzol Products Co., Newark, N. J. (Jour. A. M. A., August 17, 1929, p. 524).

Vosterol.—Investigators discovered that ergosterol when subjected to ultraviolet radiation, develops an antirachitic (vitamin D) potency enormously greater than that of cod liver oil. For therapeutic use the ergosterol after irradiation is usually dissolved in a vegetable oil. The Council on Pharmacy and Chemistry has adopted the term viosterol to designate irradiated ergosterol, and viosterol in oil to designate a preparation containing this substance, dissolved in oil. The Council has also provisionally adopted the qualifying phrases 100 D, 5 D, etc., to designate the vitamin D potency of the various preparations as multiples of the vitamin D potency of good cod liver oil. Viosterol is for use in prophylaxis and treatment of rickets and, experimentally, in other conditions arising from faulty calcium and phosphorus assimilation. It should be borne in mind that viosterol does not contain vitamin A and that harm from hypercalcemia may result from the use of too large doses.

Viosterol in Oil 100 D.—Viosterol dissolved in a vegetable oil and standardized to contain 1,333 rat units of vitamin D in each Gm., this strength being 100 times that of a potent cod liver oil used as a standard. The daily prophylactic dose for the average infant and child is 8 to 10 drops (0.1233 to 0.1666 c.c.: 2⅔ to 3½ minims.) The marketed preparations are accompanied by a dropper designed to deliver 3 drops to the minim.

Viosterol—Abbott.—A brand of viosterol in oil 100 D, N N. R. Abbott Laboratories, North Chicago, Ill.

Parke, Davis & Co's Viosterol.—A brand of viosterol in oil 100 D, N. N. R. Parke, Davis & Co., Detroit.

Viosterol—Squibb.—A brand of viosterol in oil 100 D, N. N. R.—E. R. Squibb & Sons, New York.

Cod Liver Oil with Viosteral 5 D.—Viosterol dissolved in cod liver oil, the solution containing not less than 400 vitamin A units per Gm. when tested by the pharmacopeial method and 66.65 rat units of vitamin D per Gm., this antirachitic strength being five times that of a potent cod liver oil used as a standard. This product is proposed for use in conditions in which it is desired to supplement the administration of vitamin A with that of vitamin D For infants and young children the dose is 2.5 to 3.3 c.c. (53 to 67 minims) daily.

Abbott's Viosterol Cod Liver Oil.—A brand of cod liver oil with viosterol 5 D, N. N. R. Abbott Laboratories, North Chicago, Ill.

Squibb's Viosterol Cod Liver Oil 5 D.—A brand of cod liver oil with viosterol 5 D, N. N. R. E R. Squibb & Sons, New York.

Squibb's Viosterol Cod Liver Oil 5 D. Mint Flavored.—A brand of cod liver oil with viosterol 5 D., N. N. R., containing 0.67 per cent of oil of spearmint as flavoring. E. R. Squibb & Sons, New York (Jour. A. M. A., August 31, 1929, p. 693).

PROPAGANDA FOR REFORM

Relief of Earache by Phenol-Glycerin Mixture.—Drops for earache that immediately and continuously give relief are not available, nor are they desirable, as they would mask the symptoms and permit middle ear suppuration to go on to mastoiditis with all its dangers and sequelae. Instillation, as hot as can be borne, of glycerin with 5 per cent of phenol is usually adequate to relieve pain of acute nonsuppurative middle ear inflammation. If this does not suffice, prolonged irrigation of the ear canal with water as hot as can be borne, usually gives a great deal of relief. (Jour. A. M. A., April 27, 1929, p. 1471.)

Antiscarlet Fever Preparations.—Scarlet fever streptococcus antitoxin is a horse serum preparation. It should be used only in those persons who are susceptible and already infected so that they are in danger of developing scarlet fever at once. The protection conferred by the prophylactic dose of antitoxin is transient. Scarlet fever streptococcus toxin does not contain horse serum. It should be used in five graduated doses for active immunization of susceptible persons who do not already have scarlet fever. (Jour. A. M. A., March 9, 1929, p. 830).

Sodium Bicarbonate and Calcium Carbonate for Alkalization of Urine.—Both sodium bicarbonate and calcium carbonate are effective antacids as far as the gastric secretion is concerned. However, sodium bicarbonate is much more efficient in aiding in the alkalization of the urine than calcium carbonate. The reason for the difference lies in the fact that sodium salts, such as bicarbonate, are freely absorbed by the intestine. On the other hand, calcium carbonate itself is not susceptible of absorption. Sodium bicarbonate may be freely used to the extent of actual alkalization of the urine, though it may take as much as 30 Gm. or more. (Jour. A. M. A., March 9, 1929, p. 831).

Mouth Washes and Dentifrices.—Nowhere is scientific thought and even honesty more disregarded than in the pseudobiochemical propaganda inseparably connected with the exploitation of dentifrices and mouth washes. Consider for instance what advertising writers are pleased to term "acid mouth." It is well known, but not often admitted in the propaganda of certain dentifrice manufacturers that the pH level of the saliva is maintained regardless of the material introduced into it. Dentifrices of both acid and alkaline nature are sold with the claims that they will correct all sorts of supposed conditions in the mouth. Many of the alkaline dentifrices, presumably designed to correct mouth acidity (which in a sense is the normal condition), are especially blatant in their announcements. If an abnormal acid or alkaline condition is present in the mouth, there is probably an underlying constitutional cause which should have the expert attention of physician and dentist. Sooner or later, manufacturers of dentifrices will have to heed the results of scientific investigation. The chief purpose of a dentifrice is to clean the teeth, or more practically, to establish a healthy habit. The balance of evidence is against the view that dentrifrices can be used for so-called mouth correction. (Jour. A. M. A., March 16, 1929, p. 899).

The Questionnaire Nuisance.—One of the many by-products of the modern art of advertising is the advertising agency, whose business it is to prepare advertising campaigns for those who wish to cry their wares in the market places. Out of the business of preparing advertising campaigns has grown one of the most intolerable nuisances that ever plagued the medical profession—the questionnaire. The fault rests primarily on those members of the profession who, with easy-going tolerance, give for the asking, expert opinions that are based on much work and special study. Some of these questionnaires come frankly from advertising agencies; others, although also emanating from advertising

agencies, are camouflaged with names such as "research" or "bureau".

Medical Prescriptions of Alcohol.—During 1928, 68,951 physicians used prescription books as contrasted with 48,097 in 1927. The number of licensed physicians in those states which permit the use of liquor for medicinal purposes is 116,756, so that a little more than one-half the total number of physicians permitted to prescribe alcoholic liquors avail themselves of the opportunity. Slightly more than 10 per cent of all the physicians who might prescribe alcoholic liquors used the total number of prescriptions afforded them by the government. The total number of prescriptions issued during the year increased from more than eight million in 1922 to approximately thirteen and a half million in 1925 and then decreased to less than twelve million 1927. At the close of the year the number of outstanding permits of this kind had increased to 101,052. (Jour. A. M. A., March 30, 1929, p. 1130.)

Ergotole, Extract of Ergot Purified, Ergotin—Merck, Liquor Ergot—Mulford, and Secacornin Omitted from N. N. R.—All of the ergot preparations included in New and Nonofficial Remedies, 1928, are watery extracts and as such, according to the current view, cannot contain much of the active alkaloids which are the important constituents of ergot when viewed from a clinical standpoint. With one exception, none is assayed by the U. S. P. method or any other method that will show the content of active alkaloids. The methods by which they are assayed show only, or mainly, the content of putrefactive amines, which have not proved desirable in obstetric work. The referee of the Council on Pharmacy and Chemistry for ergot preparations reported assays of the accepted brands not claiming assay by the official method (except Liquor Ergot—Mulford) which showed the preparations to contain less than 10 per cent of their claimed strength. In other words, they were found practically devoid of specific alkaloids. The Council voted to omit Ergotole, Extract of Ergot Purified, Ergotin—Merck, Liquor Ergot—Mulford, and Secacornin from New and Nonofficial Remedies. (Jour A. M. A., May 4, 1929, p. 1521.)

Ovoferrin Omitted from N. N. R.—Ovoferrin is a solution containing 5 per cent of an artificial protein product in which iron is present in the so-called organic, or masked, form. This product was accepted for New and Nonofficial Remedies in 1905. From the time of its acceptance, members of the Council have questioned its value, mainly on the ground that it presents no demonstrated superiority to the standard U. S. P. iron preparations. Ovoferrin is a survival of the now obsolete theory that iron in non-ionized form should be more efficient therapeutically than the ordinary iron preparations. The Council on Pharmacy and Chemistry voted to omit Ovoferrin from New and Nonofficial Remedies because it is an unscientific and superfluous mixture. (Jour. A. M. A., May 4, 1929, p. 1521.)

The Rental of Radium.—The Council on Physical Therapy publishes a report on the rental of radium which was approved by the Council on Pharmacy and Chemistry. The Council points out that during the last few years some of the firms supplying radium, as well as a few individual radiologists, have undertaken to prepare and to furnish radium to physicians on a rental basis. Rental has not been limited to radiologists, who might be expected to know how to make proper use of the radium, but the intent of this service is to enable any physician to treat his own patients. The Council feels that the rental of radium to physicians cannot be entirely condemned; but, since the physician renting the radium must assume full legal and moral responsibility for the diagnosis and treatment of his patients, the Council does condemn the system of 'mail-order" and telephone diagnosis and the type of treatment with which such rental has come to be associated. (Jour. A. M. A., May 18, 1929, p. 1678.)

Book Announcements

Surgical and Medical Gynecologic Technic. By THOMAS H. CHERRY, M. D., F. A. C. S., Professor of Gynecology, New York Post-Graduate Medical School and Hospital; Director of Gynecology Pan-American Hospital, New York City, etc. Philadelphia. F. A. Davis Company. 1929. Octavo of 678-xxii pages, with 558 halftone and line engravings, from photographs and pen and ink drawings by the author. Cloth. Price, $8.00 net.

Varicose Veins. With Special Reference to the Injection Treatment. By H. O. McPHEETERS, M. D., F. A. C. S. Director of the Varicose Vein and Ulcer Clinic, Minneapolis General Hospital; Attending Physician New Asbury and Fairview Hospitals; Associate Staff of Northwestern Hospital, Minneapolis, Minn. Philadelphia. F. A. Davis Company. 1929. Octavo of 208 pages. Illustrated with halftone and line engravings. Cloth. Price $3.50 net.

Sterlization for Human Betterment. A Publication of The Human Betterment Foundation. By E. S. GOSNEY, B. S., LL. B., and PAUL POPENOE, D. SC. New York. The Macmillan Company. 1929. 12mo. of 202-xviii pages. Cloth. Price $2.00.

The Treatment of Diabetes Mellitus With Higher Carbohydrate Diets. A Textbook for Physicians and Patients. By WILLIAM DAVID SANSUM, M. S., M. D., F. A. C. P.; PERCIVAL ALLEN GRAY, Ph. D., M. D., and RUTH BOWDEN, B. S. Harpers Medical Monographs. Harper and Brothers. New York and London. 1929. 12mo. of 309 pages. Leatherette. Price $2.50.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Medicine, Surgery, Etc. By Leading Members of the Medical Profession Throughout the World. Edited by HENRY W. CATTELL, A. M., M. D., and Collaborators. Volume III., Thirty-ninth Series, 1929. Philadelphia and London. J. B. Lippincott Company. 1929. Octavo of 308-viii pages. Cloth.

Papago Music. By FRANCES DENSMORE. Smithsonian Institution. Bureau of American Ethnology. Bulletin 90. United States Government Printing Office. Washington. 1929. Octavo of 229 pages. Illustrated. Cloth.

Myths and Tales of the Southeastern Indians. By JOHN R. SWANTON. Smithsonian Institution. Bureau of American Ethnology. Bulletin 88. United States Government Printing Office. Washington. 1929. Octavo of 275 pages. Cloth.

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Virginia Medical Monthly

FOUNDED BY LANDON B. EDWARDS, M. D., APRIL, 1874.
OWNED BY THE MEDICAL SOCIETY OF VIRGINIA.
PUBLISHED BY THE PUBLISHING COMMITTEE.

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Journal, 104½ West Grace Street, Richmond, Va.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: $2.00 per annum in advance.
Single Copies 20c.

VOL. 56 OCTOBER, 1929 No. 7

Editorial

The Medical School of the University of Virginia.

"The Muses still have their own native place;
'T has secret charms which nothing can deface."

As members of the medical profession of this State enter the classic shades of our historic university to attend the convention of the sixtieth session of the State Society, memories of boyhood days at medical schools come to mind. Grounded at the medical school in the rudiments of medical knowledge, medical men can never lose the impressions of their college days. Throughout life, remembrance of the classroom, the dissecting hall, the laboratory, and the wards of the hospital, lingers fresh in mind. The long hours spent over the text book, schooling the memory in the apparently limitless number of scientific terms; the daily attendance upon lectures and demonstrations, attempting to absorb from the professor's discourse additional items of knowledge; working with microscope and equipment through the days over the minutiae of bacteriology, histology, physiology, and kindred elementary subjects; memorizing in part the nature, dosage and action of numberless chemicals, herbs and drugs used in sickness and in health; learning something of the technique, methods, and the infinite details of the surgical clinic and the operations; studying and analyzing the course, conditions and behavior of disease in the wards of the hospital; the student of medicine in his years of preparation receives indelible impressions that follow him through the long years of after-life. Although his four years at medical school are in reality a small section out of his life line as a practitioner of medicine, and although much that he attempts to master during those college days necessarily becomes a dim memory, yet the air of the school, the personality of his professors, the associations of his classmates, the lasting impressions of anatomy hall and lecture room, a thousand crowding memories of these "big" years ever loom large in the memory and play important part in the course of his after years.

So the matured practitioner of medicine, as a member of the state medical association, comes back to these classic halls. He feels that here, in this great university, where medicine has been taught so well for over a hundred years, memories of his student days in medicine, "have their own native place; with secret charms which nothing can deface."

Use of Barbituric Acid Derivatives.

The widespread use of veronal, sodium veronal, anytol, allonal, ipral, phanadon, luminal and sodium luminal—barbituric acid derivatives—make consideration of the pharmacologic and toxic action of this series of preparations of interest. Weis* has brought out very clearly the salient points of this subject in a recent paper which deals chiefly with the therapeutic indications of the intravenous administration of sodium-phenyl-ethyl-barbiturate (sodium-luminal) and other barbituric acid derivatives. It is not our intention to draw attention to the intravenous administration particularly, but to direct our readers' thoughts more to the nature of this group of hypnotics. The familiarity of the practitioner with the action, both salutary and noxious, of drugs in daily use, is most important. The perusal of the article by Weis will do much to throw light upon the nature and action of these remedies. The demand for sedative, analgesic and hypnotic remedies in modern practice is such that every practitioner must be alert in the study of every new remedy of this sort.

The appearance of diethylbarbituric acid, commercially known as veronal or barbital in practice, has been followed by a large number of other barbituric acid derivatives. These have been applied in practice to such cases as formerly were given chloral and bromides and other hypnotics. Various trade names of these closely related barbital preparations have brought about some confusion in the minds of practitioners, but it is to be remembered in

*A. J. M. Sc., Sept., 1929, pages 390-405.

general terms that their pharmacologic and therapeutic actions are largely similar.

The hypnotic dose in animals exhibited such pharmacologic effects as ataxia, a sort of purposeless struggle, rage and muscular tremor; superficial sleep may supervene and may be followed by excitement upon awakening. In the case of deep sleep in animals, there is slowed respiration, sometimes rapid, and there may be periods of Cheyne-Stokes' respiration. The heart rate in animals is increased. The blood pressure falls. Peristaltic movements at the gastro-intestinal tract stop and the temperature of the animal falls. Toxic action of this group of remedies in man is characterized by a dull sensation in the head and by ataxia, by difficult swallowing, by a disturbed sense of smell, and by disorder of speech. The onset of sleep in this state shows reduced respiration and a sort of Cheyne-Stokes' variety of respiration. The heart rate is increased. The blood pressure is lowered. The temperature falls. Kidney function is disturbed.

The author discusses the use of these remedies as an aid to surgical anesthesia; in certain psychoses, in eclampsia cases, in epilepsy, in toxic reactions due to certain local anesthetics, in tetanus, in convulsions from cerebral hemorrhage, in persistent hiccough, and other conditions. The *pros* and *cons* of the effects of this group of remedies are brought out. Epilepsy, for instance, has been controlled favorably by the judicious use of luminal, properly timed in administration. In tetanus, five patients received sodium-luminal intravenously in a 10 per cent solution and three died. In the instance of convulsion accompanying cerebral hemorrhage and traumatic injury to the skull, seven patients were relieved of the convulsion promptly. Sodium-luminal was administered intravenously.

But withal, it must be said, that these remedies are toxic and harmful, and, while producing salutary effect upon such symptoms as pain, difficult and distressing breathing, convulsive seizures and like conditions, they are toxic in action and must be used with due care.

In summarizing, Weis notes that man is more susceptible to the barbituric acid derivatives than animals, and that "in man a relatively smaller percentage of the fatal dose produces analgesia and narcosis." Marked individuality exists in patients as to the responses and toxic action. He notes also that the routine use of intravenous hypnotic doses of the barbituric acid derivatives for surgical anesthesia and "for the inducement of sleep of days' duration in certain psychoses, is dangerous." The author concludes that "a hypnotic dose of any barbituric derivative entails potential danger to the patient."

Syphilis in the Liver.

One's interest in the pathologic action of syphilis in the liver never lags; a study of a group of one hundred cases, conducted over a period of from six months to six years engages the attention of the reading physician at once; from a contribution presenting clinical and diagnostic data, at the hands of O'Leary,* Greene and Rowntree, of the Mayo Clinic and Mayo Foundation, the practitioner at the bedside and in the progress of daily cases receives a fund of interesting information, both from its review of already known conditions and from the authors' experience, opinions and conclusions in this important clinical survey.

Syphilis of the liver is not thought to be a common complication of syphilis. According to observations heretofore made, this conclusion may be held but it is questionable whether or not gross clinical changes in the liver or terminal symptoms of advanced liver pathology, superinduced by luetic morbidity of its structure, interstitial, vascular, or parenchymal, should be relied upon as a criterion of judgment as to its frequency. Based upon the older methods, it may be rare, but, based upon more careful study of the functional activity of the organ by laboratory tests, the frequency of syphilitic hepatic complication is probably greater than heretofore estimated. The necropsy findings and laboratory tests seem to point this way.

Modifying Stokes' suggested classification, our authors note that acute syphilis may be characterized by an acute hepatitis of a benign type, and, also, by a course of severe change denoted as acute yellow atrophy. While late syphilis may have specific liver changes without displaying recognized symptoms, a diffuse hepatitis may occur. There may be a gummatous hepatitis; a sort of syphilitic cirrhosis, either affecting biliary structures and producing jaundice or vascular structures and producing ascites.

Besides these luetic changes in the liver of the syphilitic, there are to be remembered certain serious and important damage-phenomena

*Read O'Leary in Archieves of Internal Medicine—August, 1929.

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that the modern specific treatment (arsenicals) of syphilis imposes on the liver. These may be called post-arsenical liver changes. This group of liver complications is to be watched for in the use of arsenic therapy as well as in malarial inoculations in the late syphilitic.

Without considering their comment on hepatitis of acute syphilis, diffuse hepatitis of late syphilis, gummatous hepatitis, chronic hepatitis with jaundice (of biliary cirrhosis) and chronic hepatitis with ascites (portal cirrhosis), one receives in this paper an interesting study at the hands of O'Leary and co-workers. Laboratory observations of liver function were made. Fructose tolerance proved of little value in diagnosis. Nitrogen partition of the blood likewise proved of little diagnostic value. Bile pigment tests were useful in cases of post-arsphenamine jaundice. Dye retention was observed in all cases of hepatitis with jaundice of whatever type. In case of gumma dye, retention was variable; the majority showed a slight degree of abnormal retention. In cirrhosis, retention of dye was more uniform; practically all showed some definite retention and it was of diagnostic significance. The bile acids of the blood by means of the Pettenkofer's test was not of diagnostic importance; only in a few cases was there an increase of bile acids in the blood.

The authors of this contribution were impressed by the varied types of hepatic disease of syphilitic import and suggested the importance of thinking of the type of hepatic syphilitic lesion. The differential diagnosis, however, is to be sought through the aid of history, general examination, laboratory tests, therapeutic trial and disciminating and prolonged observation.

The Action of Merbaphen (Novasurol) on the Kidney of the Dog.

Keith and Johnstone* report the functional and pathologic effect of novasurol on the kidney of the dog. As this remedy has been used recently more or less extensively by practitioners, the conclusions and impressions of these observers in these experiments may be of interest. They used five dogs. The drug was given into the vein and also intramuscularly. The drug was diluted wih physiologic solution of sodium chloride in such proportion that 0.1 c.c. of merbaphen was contained in 0.5 c.c. of the solution.

*Arch. Int. Med., Sept., 1929, page 438.

They found that, if the fluid is limited and the chloride intake is constant, diuresis with increase in the relative and total urine chlorides always occurs following injection of the drug, but that there is no constant change in the blood chlorides.

Again, they noted that repeated doses of merbaphen, corresponding in amount to doses used therapeutically in man, given over a period of five months, produced no functional change in the kidney of the dog; that is to say, no change in the blood urea, non-protein nitrogen, specific gravity, or phthalein excretion. They, however, found that kidneys of animals, given repeated doses, showed evidence of slight degeneration when examined histologically from three to nine days following final dose. The damages were greater following the larger doses but appeared to disappear if the drug was discontinued. They also found that in toxic doses, the drug was similar in action on the kidneys of the rabbit and also similar to the action of other mercury compounds in common use.

These observations upon the dog may be remembered when applying the drug in man. The man is usually dropsical, edematous and not infrequently approaching the terminal stages of a chronic pathologic process in the liver, heart or kidneys; separately or in combination.

News Notes

All Roads Lead to Charlottesville,

And they are good roads too, should you prefer to use your auto as a means of transportation to the meeting of the Medical Society of Virginia in Charlottesville, October 22nd, 23rd, and 24th.

The letter by our President, Dr. J. Bolling Jones, of Petersburg, in this issue, gives an idea of the program. The celebration on Tuesday, the 22nd, incident to the dedication of the new Medical Building at the University, will add great interest to this meeting. All members and ladies accompanying them are invited to these exercises and also to the luncheon immediately following. Attractive scientific and commercial exhibits have been arranged and interesting clinics planned. Those who have not engaged space for scientific exhibits should write Dr. John S. Horsley, Jr., 617

West Grace Street, Richmond, at once, as booths are to be built very shortly.

Cabell Hall at the University has been selected as the place for the scientific and business meetings and exhibits. Special arrangements will be made to handle automobile traffic and Cabell Hall is quite convenient to the University Cafeteria where lunch and supper may be obtained at reasonable prices.

A special feature of this meeting will be the presentation of the Canti Film on Wednesday evening, about 8:15, which will be shown by courtesy of the Virginia Section of the American Society for the Control of Cancer.

All members are requested to fill out and mail cards which are enclosed with the programs *at once*, as it will assist the local committee and hotels in making visitors comfortable. Do not stay away from the meeting if you are unable to make reservation at a hotel, for there are plenty of rooms to be had in boarding houses and private homes. Just WRITE IMMEDIATELY to DR. W. D. MACON, CHARLOTTESVILLE, VA., IN REGARD TO THE ACCOMMODATIONS DESIRED.

Be sure to bring the ladies with you.

We append a list of delegates and alternates from the various component societies, whose names had been received at office of headquarters before going to press. Other component societies are urged to arrange for representation in the House of Delegates and send names of delegates and alternates promptly to the Executive Secretary at 104½ West Grace Street, Richmond.

DELEGATES AND ALTERNATES

ACCOMACK—Dr. James C. Doughty, Onancock, *Delegate;* Dr. Rooker J. White, Keller, *Alternate.*

ALBEMARLE—Drs. R. L. Page, Batesville, and Percy Harris, Scottsville, *Delegates;* Drs. Allen Voshell, University, and W. E. Brown, Sanatorium, *Alternates.*

ALEXANDRIA—Dr. R. Lee Wilkins, Alexandria, *Delegate;* Dr. H. A. Latane, Alexandria, *Alternate.*

AMELIA—Dr. James L. Hamner, Mannboro, *Delegate;* Dr. H. C. Rucker, Mattoax, *Alternate.*

BEDFORD—Dr. W. O. McCabe, Thaxton, *Delegate;* Dr. B. A. Rice, Forest, *Alternate.*

BOTETOURT—Dr. A. W. Hammond, Amsterdam, *Delegate;* Dr. E. W. Dodd, Buchanan, *Alternate.*

DICKENSON-BUCHANAN—Dr. J. C. Sutherland, Clintwood, *Delegate.*

FAIRFAX—Dr. J. T. Jones, Herndon, *Delegate;* Dr. William Meyer, Herndon, *Alternate.*

FAUQUIER—Dr. Richard Mason, The Plains, *Delegate;* Dr. George H. Davis, Warrenton, *Alternate.*

LEE—Dr. P. D. Pence, St. Charles, *Delegate;* Dr. Geo. W. Young, Pennington Gap, *Alternate.*

LOUDOUN—Dr. John A. Gibson, Leesburg, *Delegate;* Dr. Frank Simpson, Purcellville, *Alternate.*

MECKLENBURG—Dr. W. W. Wilkinson, La Crosse, *Delegate;* Dr. B. S. Yancey, Chase City, *Alternate.*

MID-TIDEWATER MEDICAL SOCIETY—*Essex County*, Dr. E. L. W. Ferry, Millers Tavern, *Delegate;* Dr. J. N. DeShazo, Center Cross, *Alternate.*

Gloucester County—Dr. J. D. Clements, Ordinary, *Delegate;* Dr. James W. Smith, Hayes Store, *Alternate.*

King and Queen County—Dr. R. D. Bates, Newtown, *Delegate;* Dr. W. S. Cox, Shackelfords, *Alternate.*

King William County—Dr. A. W. Lewis, Ayletts, *Delegate;* Dr. M. H. Harris, West Point, *Alternate.*

Mathews County—Dr. R. R. Hoskins, Mathews, *Delegate;* Dr. C. M. Rains, Bohannon, *Alternate.*

Middlesex County—Dr. W. P. Jones, Urbanna, *Delegate;* Dr. V. P. Stiff, Harmony Village, *Alternate.*

New Kent County—Dr. M. H. Eames, Lanexa, *Delegate;* Dr. Thomas P. Darracott, Tunstall, *Alternate.*

York County—Dr. L. O. Powell, Seaford, *Delegate;* Dr. E. W. Buckingham, Messick, *Alternate.*

NANSEMOND—Dr. O. R. Yates, Suffolk, *Delegate;* Dr. C. H. Dawson, Suffolk, *Alternate.*

NORFOLK—Drs. P. St. L. Moncure, Franklin D. Wilson, N. G. Wilson, C. Lydon Harrell, and E. C. S. Taliaferro, all of Norfolk, *Delegates;* Drs. A. B. Hodges, Julian L. Rawls, Walter B. Martin, and Chas. J. Andrews, all of Norfolk, *Alternates.*

NORTHAMPTON—Dr. Harry Denoon, Nassawadox, *Delegate;* Dr. S. K. Ames, Cape Charles, *Alternate.*

PATRICK-HENRY—*Henry County*—Dr. J. M. Shackelford, Martinsville, *Delegate;* Dr. H. G. Hammond, Martinsville, *Alternate.*

Patrick County—Dr. W. C. Akers, Stuart,

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Delegate; Dr. J. T. Shelburne, Critz, *Alternate.*

Pittsylvania County and Danville—Dr. I. C. Harrison, Danville, *Delegate;* Dr. J. J. Neal, Danville, *Alternate.*

Post-Graduate Medical Society—*Brunswick County*—Dr. W. C. Harmon, Dolphin, *Delegate;* Dr. F. N. Mallory, Lawrenceville, *Alternate.*

Dinwiddie County—Dr. Wright Clarkson, Petersburg, *Delegate;* Dr. G. H. Reese, Petersburg, *Alternate.*

Greenesville County—Dr. B. J. Atkinson, North Emporia, *Delegate;* Dr. G. M. Naff, North Emporia, *Alternate.*

Nottoway County—Dr. W. W. Bennett, Blackstone, *Delegate;* Dr. C. C. Tucker, Blackstone, *Alternate.*

Prince George County—Dr. D. L. Elder, Hopewell, *Delegate;* Dr. J. M. Bailey, Hopewell, *Alternate.*

Surry County—Dr. W. W. Seward, Surry, *Delegate;* Dr. F. E. Steere, Claremont, *Alternate.*

Sussex County—Dr. Joel Crawford, Yale, *Delegate;* Dr. T. M. Raines, Wakefield, *Alternate.*

Prince Edward—Dr. Susan W. Field, Farmville, *Delegate;* Dr. T. G. Hardy, Farmville, *Alternate.*

Princess Anne—Dr. N. A. Nicholson, Creeds, *Delegate;* Dr. Cora Z. Corpening, Virginia Beach, *Alternate.*

Rappahannock Valley Medical Society—Dr. T. Welch Dew, Fredericksburg, *Delegate;* Dr. John E. Cole, Fredericksburg, *Alternate.*

Richmond Academy of Medicine—Drs. Fred M. Hodges, C. C. Coleman. Stuart Michaux, James H. Smith, W. B. Blanton, Mark W. Peyser, Manfred Call, and J. Allison Hodges, all of Richmond, *Delegates;* Drs. C. R. Robins, Carrington Williams, Thos. D. Jones, J. B. Stone, W. L. Peple, W. S. Beazley, R. W. Miller, and W. B. Porter, all of Richmond, *Alternates.*

Rockingham—Dr. N. M. Canter, Harrisonburg, *Delegate;* Dr. Howard Armstrong, Harrisonburg, *Alternate.*

Russell—Dr. S. C. Couch, Cleveland, *Delegate.*

Scott—Dr. J. M. Dougherty, Jr., Gate City, *Delegate.*

Southampton—Dr. R. H. Cobb, Franklin, *Delegate;* Dr. A. P. Cutchin, Franklin, *Alternate.*

Southwestern Virginia Medical Society—*Bland County*—Dr. J. A. Wagner, Bland, *Delegate.*

Carroll County—Dr. C. B. Nuckolls, Hillsville, *Delegate;* Dr. W. R. Gardner, Hillsville, *Alternate.*

Giles County—Dr. K. D. Graves, Pearisburg, *Delegate;* Dr. M. C. Newton, Narrows, *Alternate.*

Grayson County—Dr. W. P. Davis, Galax, *Delegate;* Dr. J. K. Caldwell, Galax, *Alternate.*

Montgomery County—Dr. A. M. Showalter, Christiansburg, *Delegate;* Dr. M. B. Linkous, Blacksburg, *Alternate.*

Pulaski County—Dr. R. H. Woolling, Pulaski, *Delegate;* Dr. R. F. Thornhill, Pulaski, *Alternate.*

Smyth County—Dr. Z. V. Sherrill, Marion, *Delegate;* Dr. R. E. Hughes, North Holston, *Alternate.*

Washington County—Dr. F. H. Smith, Abingdon, *Delegate.*

Wythe County—Dr. J. M. Miller, Wytheville, *Delegate;* Dr. E. M. Chitwood, Wytheville, *Alternate.*

Tazewell—Dr. Isaac Peirce, Tazewell, *Delegate.*

Wise—Dr. G. B. Setzler, Norton, *Delegate.*

Virginia Pediatric Society.

The annual meeting of the Virginia Pediatric Society will be held at a luncheon in the Monticello Hotel, Charlottesville, Wednesday, October 23rd, at 1:30 P. M. Dr. L. T. Royster, University. The President, will preside. Anyone interested in the Diseases and Welfare of Children and who wishes to become a member of the Society, will be welcomed at this meeting.

Dr. J. Buren Sidbury, Wilmington, N. C., will be the speaker on this occasion. His talk will be on "Transfusion in Infancy and Childhood." There will also be a Round Table discussion of interesting topics.

The Secretary, Dr. W. B. McIlwaine, or the Local Chairman, Dr. W. W. Waddell, will be glad to hear from any physician who will be interested in attending the luncheon.

The Virginia Hospital Association

Is to hold its annual meeting in Charlottesville, on Tuesday, October 22nd, at 3:00 P. M., the afternoon of the opening day of the Medical Society of Virginia. Dr. J. M. Shackelford, Martinsville, is president; Dr. P. St. L. Moncure, Norfolk and Miss Bertha Pickels,

Staunton, vice-presidents; and Dr. John O. Boyd, Roanoke, secretary-treasurer. Drs. Southgate Leigh, Norfolk, John Bell Williams, Richmond, and Miss Virginia Thacker, Roanoke, form the executive committee.

Below we give program which has been prepared for this meeting, to which are invited all members of the State Society.

PROGRAM
Tuesday Afternoon, October 22, 1929
3:00 P. M.

PAPERS:
- Strict Surgical Cleanliness an Essential in Successful Hospital Work—Dr. Southgate Leigh, Norfolk.
- The Frequent Changes in the Personnel of a Hospital.—Miss Virginia Thacker, Supt. Lewis-Gale Hospital, Roanoke.
- Economy in Hospital Management—Miss Bertha E. Pickles, Supt. Kings Daughters Hospital, Staunton.
- Liability Insurance. Should the Hospitals of Virginia Carry it? If So, What Kind?—Mr. Geo. A Riddick, Richmond.

ROUND TABLE OF HOSPITAL PROBLEMS, conducted by Dr. J. L. McElroy, Pres. Hospital Division Medical College of Va.
- Nursing Problems in Small Hospitals.
- The Collections of Delinquent Accounts, Including Those From Accident Cases.
- The Purchase of Supplies.
- The Hospital and Its Relation to Health Department.
- The Promotion of Public Health.
- The Problem of the Dietetic Department.
- Laboratory, X-Ray and Drug Charges: Should Hospitals Expect a Profit From These Charges?

ELECTION OF OFFICERS.

The Southern Medical Association

Is arranging for a most attractive meeting in Miami, Fla., November 19th-22nd, following which there will be a trip to Cuba, under the direction of Mr. C. P. Loranz, secretary-manager of the Association, for those who may have time for a more extended vacation. Dr. Thomas W. Moore, Huntington, W. Va., is this year's president. This is a lovely time of the year in Miami and special entertainments, as only Miami can furnish, are being arranged. Sports will take the form of golf, trap shooting and fishing.

If unacquainted with names of Miami hotels, Dr. Bascom H. Palmer, Jr., Huntington Bldg., Miami, chairman of the Committee on Hotels, and his committee will see that comfortable accommodations are arranged in accordance with instructions given.

Start the winter right, by attending this meeting in Miami.

The Clinch Valley Medical Society

Held one of the best meetings in its history on September 28th at Norton, Va., under the presidency of Dr. Isaac Peirce, of Tazewell. There were forty members in attendance. Papers were presented by Dr. Peirce, president, Dr. H. G. Grant, of the State Department of Health, Dr. Churchill Roberston, Salem, and Drs. Greer Baughman, James H. Smith, and H. U. Stephenson, of Richmond. An American Legion Dance was given that evening in honor of the Society.

The following officers were elected for the ensuing year: President, Dr. J. B. Wolfe, Coeburn; vice-presidents, Drs. J. M. Dougherty, Nichelsville ,and S. C. Couch, Cleveland; secretary-treasurer, Dr. C. B. Bowyer (re-elected), Stonega. The next meeting of this Society will be held at Richlands, Va., in April.

The Southside Virginia Medical Association

Convened in Suffolk on Tuesday, September 10th, with a good attendance present. Among the most interesting features of the program was a talk on the recent epidemic of Anterior Poliomyelitis in Roanoke by Dr. Roy Hoover of that city. The visiting doctors were given a delightful dinner at the Hotel Elliott by the local profession. The next meeting will be held in Petersburg in December.

Dr. R. H. Manson, McKenney, is president, and Dr. R. L. Raiford, Franklin, secretary of this Association.

Married.

Dr. William Thomas Harris and Miss Sarah Tomlinson, both of Troy, N. C., July 17th. Dr. Harris is an alumnus of the Medical College of Virginia, of the class of '25.

Dr. Oscar Bernard Biern and Miss Charlotte Egri, both of Huntington, W. Va., August 24th. Dr. Biern is an alumnus of the Medical Department of the University of Virginia.

Dr. Oliver Lee Jones, Hopewell, Va., and Miss Anne Hope Story, Franklin, Va., September 30th.

The American College of Surgeons

Will hold its annual Clinical Congress in Chicago, Ill., October 14th to 18th. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, is director-general and this year's president. Surgeon General M. W. Ireland, of Washington, D. C., is president-elect.

Eliminating Diphtheria in Children's Institutions.

At Mooseheart School, Mooseheart, Ill., says the *Illinois Health Messenger*, there has been only one case of diphtheria since 1920,

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though the average number of children in the school during that time exceeded 1,000. The resident physician ascribes this record to the fact that every child entering the school since September, 1919, has been immunized with diphtheria toxin-antitoxin. The same practice is carried out at the Soldiers' Orphans' Home at Normal, Ill., which has an average of 700 children, and no case of the disease has developed in more than three years.

The American Roentgen Ray Society

Had its annual meeting in New York City, September 17th-20th, inclusive, under the presidency of Dr. H. M. Imboden, of New York City. The following were elected officers for the ensuing year: President-elect, Dr. Alexander B. Moore, Rochester, Minn., (an alumnus of the University of Virginia, Department of Medicine); vice-presidents, Dr. Howard E. Ruggles, San Francisco, and Dr. Bernard H. Nichols, Cleveland, O.; secretary, Dr. John T. Murphy, Toledo, O.; treasurer, Dr. William A. Evans, Detroit, Mich.; librarian, H. H. Dachtler, Toledo, O., new member Executive Council, Dr. Fred M. Hodges, Richmond, Va.; delegate to the International Radiological Congress in Paris in 1931, Dr. Preston M. Hickey, Ann Arbor, Mich.; alternate, Dr. Leopold Jaches, New York City. Place and date of next meeting are to be named by the Executive Council.

Dr. William C. Holt,

Of the class of '26, University of Virginia, Department of Medicine, and recently of Dallas, Tex., has located in Mexia, Tex., and will limit his practice to urology.

Dr. John S. Horsley, Jr.,

Richmond, Va., gave an address on September the 19th, by invitation, before the Central Tri-State Medical Society which met in Huntington, W. Va.

Dr. R. H. Newman,

Who has been located at Montvale, Va., for some time, has located in Vinton, Va., where he will continue the practice of his profession.

Blindness From Occupational Pursuits.

A campaign was recently undertaken by the American Federation of Labor and the National Society for the Prevention of Blindness, in an effort to conserve the sight of working men and women. Mr. Lewis H. Carris, New York, managing director of the National Society for the Prevention of Blindness, in one of his addresses, stated: "Of the 100,000 blind persons in the United States, it is estimated that about 15,000 lost their sight in occupational pursuits. In addition to the totally blind, there is a much large number of men, women and children whose vision has been so impaired by the eye hazards of industrial occupations that they are handicapped throughout life." He said further that the industries of the country are now paying approximately $10,000,000 a year compensation to workmen who have been totally or partially blinded at work, but that leaders of organized labor can do much to reduce this occupational blindness by emphasizing at every opportunity the fact that nearly all such blindness is easily preventable, and that no financial award can compensate for the loss of vision.

Chicago's Police Employment Agency for Boys.

Chicago has reduced its toll of arrests of boys under twenty-one years of age from 11,438 to 8,759, a reduction of 24 per cent within a year. This reduction in arrests has been ascribed largely to the Big Brother role assumed by the police of that city in finding work for unemployed boys. The neighborhood police stations have been used as employment bureaus, and many business leaders have cooperated actively in the program, which was definitely undertaken to reduce the delinquency situation. More than 22,000 boys applied during the first twelve months of the operation of this scheme, and jobs were found for nearly 20,000.

Drs. McCarthy and Fields.

Dr. Russell J. Fields announces his association with Dr. Lee McCarthy, Washington, D. C., in the practice of dermatology and syphilology. They have their offices at 1705 N Street, Northwest, that city.

Offer of Prize for Best Study on Causes of Fall in Birthrate.

In response to a recent prize offered by the Eugenics Research Association, essays submitted on the birth-death ratio in various countries have shown that the net fecundity has been falling for the last forty years in different European countries.

This Association now (September, 1929,) offers a new prize of $3,500.00 for the best essay upon the causes of this decline with especial reference to Europeans and persons of European stock.

The treatment should be historical, should include an analysis of studies already made upon the subject, and should lay stress upon

the phenomenon in peoples of Nordic, or chiefly of Nordic origin in all parts of the world. Preference will be given to essays which are based upon objective studies rather than expressions of opinion.

The contest is open to the world, and the essays may be written in the English, German or French languages.

Essays must not be signed, but each must be identified by a motto, and accompanied by a sealed envelope containing the name and address of the author.

The Association reserves the right of publication of essays submitted.

The essays in competition for this prize are to be mailed to the Eugenics Research Association, Cold Spring Harbor, N. Y., U. S. A. They should be posted so as to reach their destination not later than June 1, 1930.

Dr. Stuart McGuire Honored.

In recognition of his long service as president of the Medical College of Virginia, Richmond, from which Dr. Stuart McGuire retired on July 1, 1925, the board of visitors of the college has established the McGuire Lectureship which will be filled anually by an invited speaker. The subjects of the lectures will usually cover topics related to medicine, dentistry, pharmacy, or nursing, the fields covered by the several schools of the institution.

January 1929 Monthly Wanted.

We have received so many requests for the January, 1929, issue of the MONTHLY that our file of this number is exhausted. We will appreciate being advised if any of our readers have copies of that issue which they no longer wish. Address VIRGINIA MEDICAL MONTHLY, 104½ West Grace St., Richmond, Va.

Noted Among Bank Directors in Southside Virginia.

In recognition of their financial and social standing, doctors are often made directors and officers of banks. Names of some doctors recently noted as directors in Southside Virginia banks are:

Dr. C. C. Tucker, Blackstone.
Dr. R. D. Tucker, Powhatan.
Dr. H. Cowles Rucker, Mattoax.
Dr. J. A. B. Lowry, Crewe.
Dr. James L. Hamner, Mannboro.
Dr. J. Weldon Smith, Farmville.

The Cost of Medical Care.

"The delivery of adequate, scientific medical service to all the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life," is announced as the aim of the Committee on the Cost of Medical Care by Dr. Olin West, Secretary of the American Medical Association. This committee includes among its membership private medical practitioners, National and State public-health officers, a public-health nurse, institution and organization executives, economists, and the general public. Twenty-three of its forty-two members hold medical degrees, and its chairman is Ray Lyman Wilbur, M. D., Secretary of the Interior and chairman of the President's White House Conference on Child Health and Protection.

Committeemen in American Legion.

Dr. A. T. Finch, Chase City, has been appointed chairman of the rehabilitation committee of the Virginia Department of the American Legion; Dr. W. B. Peters, Appalachia, vice-chairman; and Dr. George S. Hurt, Roanoke, one of the members of this committee.

Dr. G. B. Barrow,

For many years at Clarksville, Va., is now an assistant physician at the Western State Hospital, Staunton, Va.

Dr. George H. Snead,

Richmond, Va., announces removal of his office to 407 West Grace Street, this city, where he will continue his practice in connection with Grace Hospital. His work will be limited to diseases of the eye, ear, nose and throat.

Hopewell Board of Health Reorganized.

The Hopewell, Va., Board of Health was recently reorganized and Dr. D. Lane Elder was made president, Dr. William M. Phipps secretary, and Dr. J. C. Bodow was appointed one of its members.

Dr. J. M. Bishop,

Appalachia, Va., is in Washington, D. C., where he is taking a year's special work in pediatrics at the Children's Hospital.

Dr. H. C. Alexander, Jr.,

For a time located at Farmville, Va., has moved to Newport News, Va., where he is associated with Dr. F. W. Poindexter, with offices in the Medical Arts Building.

Dr. J. A. Lipnick,

Recently of Norfolk, Va., announces his removal to Brooklyn, N. Y., where he has offices at 390 East 32nd Street, corner Avenue D.

Dr. P. G. Hamlin,

Recently assistant physician at Eastern State

Hospital, Williamsburg, Va., is now at Harrisburg State Hospital, Harrisburg, Pa., where he is acting temporarily as assistant physician.

The American Red Cross

Appeals again this year for an endorsement of its activities by the people, through an invitation to enroll as members of that organization for 1930. Although the campaign is scheduled for November 11th to 28th, many communities establish booths for enrollment during October. Be sure to renew your membership so that you may have a part in the splendid work of the Red Cross.

Dr. R. H. Wright,

Medical Arts Building, Richmond, Va., announces the association of Dr. Samuel P. Oast, recently of New York City. Dr. Oast will limit his practice to diseases of the eye.

School Children and Heart Disease.

Ninety children out of 10,000 examined were found to have organic heart disease during a survey of heart conditions among public-school children recently conducted in Philadelphia, according to the supervisor of medical inspection of public schools of that city. The younger children showed slightly less disease than the older, and the boys slightly less than the girls. Heart disease is reported to be increasing among children from ten to fourteen years of age, and to be the principal cause of death during that age period.

The Association of Seaboard Airline Railway Surgeons

Held its annual meeting at Virginia Beach, early in September, under the presidency of Dr. C. D. Christ, of Orlando, Fla. Nearly two hundred members registered attendance. Following a program of scientific papers, the members enjoyed a day of sight-seeing and pleasure. Dr. Goode Cheatham, Henderson, N. C., was elected president of the Association for the coming year; Dr. Herschel A. Smith, Americus, Ga., first vice-president; and Dr. J. W. Palmer, Ailey, Ga., was re-elected secretary-treasurer. Dr. Frank Eskridge, Atlanta, Ga., was elected new member of the executive committee. Other members of the executive committee are Dr. Joseph D. Collins, Portsmouth, Va., chief surgeon of the railway, chairman; Dr. J. P. Monroe, Sanford, N. C.; Dr. W. A. Boyd, Columbia, S. C.; Dr. L. S. Early, Petersburg, Va.; and Dr. J. W. Corbett, Camden, S. C.

Dr. John A. B. Lowry,

Crewe, Va., is spending some time in New York City, where he is doing post-graduate work. He was first at the New York Lying-In Hospital but is now at the New York Post-Graduate Medical School and Hospital. He expects to return home about the first of December.

Dr. and Mrs. Herbert W. Lewis

And daughter, Mildred, of Dumbarton, Va., had a pleasant vacation last month, when they joined some friends in Washington, D. C., and went for an automobile trip to Baltimore and thence by the Susquehanna Trail to New York and Canada. They visited many points of interest en route.

Heads American Orthopedic Society.

Dr. Willis C. Campbell, of Memphis, Tenn., an alumnus of the University of Virginia, Department of Medicine, was elected president of the American Orthopedic Society at its session held in London, England, during the summer.

Aberdeen's Maternal Mortality.

A lower maternal mortality rate was found for mothers who received prenatal care in Aberdeen, Scotland, than for those who did not, according to the records kept during the decade ending in 1927. The medical officer of health of Aberdeen, in his recent report on these records, states that the evidence goes to show that improvement of prenatal services will result in an important reduction in maternal mortality.

Dr. Austin I. Dodson,

Richmond, Va., by invitation, read a paper on "Some Principles in Bladder Surgery" before the annual meeting of the Seventh District Medical Association of South Carolina, held at Sumter, on September the 12th.

Dr. E. W. Buckingham,

Messick, Va., on October the 1st moved to Newport News, Va. He will be engaged in general practice, with offices in the Medical Arts Building.

Grant for a Research Fellowship.

Announcement has been made that the Maltbie Chemical Company of Newark, N. J., has contributed a grant for a research fellowship for the coming year to the Philadelphia College of Pharmacy and Science.

The research work to be done under this fellowship will be fundamental in character and will cover a study of the toxicity, pharmacology and bactericidal efficiency of creosote, creosote compounds, and constituents of creosote. The work to be done under this fellow-

ship follows the chemical researches on creosote of the past year under the Maltbie Chemical Company Fellowship at Princeton University.

The establishment of this research fellowship continues the policy of the Maltbie Chemical Company to contribute to the study of the chemistry and pharmacology of important drugs.

Directs Nursing at Medical College of Virginia Hospitals.

Miss Frances Helen Zeigler, R. N., former educational director and assistant director of nurses, school of nursing and health, University of Cincinnati, on September 1st became dean of the school of nursing and director of nursing service of college hospitals at the Medical College of Virginia, Richmond. Miss Zeigler is an alumna of Virginia Intermont College, Johns Hopkins Hospital School of Nursing, and Teachers College, Columbia University.

Dr. W. N. Thompson,

An alumnus of the Medical College of Virginia, after a service of over a year with Lewis-Gale Hospital, Roanoke, Va., has moved to Stuart, Va., where he is engaged in general practice.

New York Diphtheria Rate Lowered.

New York is winning a lower death rate from diphtheria as a result of the intensive immunization campaign being waged by the city's department of health and board of education. A decrease of nearly 29 per cent in the death rate from this disease and of more than 19 per cent in the case rate have been reported for the first half of 1929. The goal of this campaign is the immunization of every child between the ages of 9 months and 10 years.

Dr. Fred J. Wampler,

After studying at Johns Hopkins University, returned to Richmond, recently, and resumed his connection with the Medical College of Virginia as professor of preventive medicine.

Dr. Conway Hiden,

Of the class of '25, University of Virginia, Department of Medicine, has just opened an office at 98 Nassau Street, Princeton, N. J., and also became roentgenologist to Princeton University the latter part of September.

Dr. C. Edward Martin,

After a residence of some months in Murfreesboro, N. C., on account of his wife's health, recently returned to North Emporia, Va., and located in his former home. He has an office at his residence and an office for certain day hours at the Greenesville Drug Store.

Dr. T. H. Clarke,

Of the class of '25, University of Virginia, Department of Medicine, after practicing for a time at Bluefield, Va., recently located at Thorpe, W. Va.

Gift to Woman's Medical College.

Dr. Margaret P. Kuyk, Richmond, Va., has made a gift of $1,000 to the Woman's Medical College of Philadelphia for preventive medicine work. We understand that this gift is to be repeated annually.

London's Foundling Hospital Site May Become a Children's Park.

Lord Rothermere has offered in the neighborhood of $500,000 toward the purchase for a children's park of the former site of the London Foundling Hospital. This institution, which was made famous the world over by Charles Dickens in his novel, Little Dorrit, has recently moved to the country, leaving available a considerable piece of ground in a part of London greatly in need of park space. The only condition attached to Lord Rothermere's offer is that for one month each year the park shall be placed at the disposal of the British Boy Scouts for a camping ground.

This proposed gift brings to mind a remarkable bequest which the Foundling Hospital received nearly two centuries ago by the will of Handel, the German composer of the Messiah, who left it the score of that greatest of oratories. Even during his lifetime the hospital funds had been enriched by about $50,000 through his annual rendition of his masterpiece on the great organ which the composer himself presented to this children's asylum.

Hawaii's School Cafeterias.

The school cafeterias of Hawaii, started ten years ago, are supplying 22,000 of the 70,000 public-school children in that Territory with wholesome balanced lunches at five cents each. There are now seventy-five of these cafeterias.

For Sale or Lease—

Modern fireproof hospital, capacity forty beds, fully equipped. Also has medical library. Open for inspection at any time. Located near good roads in progressive town. Attractive proposition to right party. Write "X. Y. Z." care VIRGINIA MEDICAL MONTHLY. (*Adv.*)

For Sale—

A nice home on Eastern Shore of Virginia. Will turn over to purchaser a large well-established practice in one of the most progressive and thickly populated sections of Virginia. Address "No. 186," care the VIRGINIA MEDICAL MONTHLY. (*Adv.*)

Obituary Record

Dr. George Taylor Klipstein,

Alexandria, Va., died in Los Angeles, Calif., September the 5th, and his body was brought back to Virginia for burial. Dr. Klipstein was seventy-five years of age and studied medicine at Jefferson Medical College, Philadelphia, from which he received his diploma in 1880. He had practiced in Alexandria and Washington ,D. C., for forty-seven years and had been a member of the Alexandria Hospital staff for all these years. We was an ex-president of the Medical Society of Northern Virginia and District of Columbia and had been for many years a member of the Medical Society of Virginia, and had served a term as a member of its council. His wife and two sisters survive him.

Dr. George J. Williams,

Died at his home in Hilton Village, Va., October 1st, after having been in ill health for over a year. He was sixty-two years of age and a graduate of the Medical College of Virginia, class of '98. Dr. Williams had been a member of the Medical Society for a number of years and had also served in the Council of the Society. He had been a member of the staff of the Elizabeth Buxton Hospital, Newport News, Va., for twenty years, and was a member of the Newport News Rotary Club and the Bremond Lodge, No. 241, A. F. & M. He is survived by two sisters.

Dr. J. Alfred Riffe,

Covington, Va., member of the Medical Society of Virginia, died August the 5th, at the age of forty-five years. His death was due to angina pectoris. Dr. Riffe was a graduate in medicine from the College of Physicians and Surgeons, Baltimore, Md., in 1909, and took an active interest in the medical affairs in his section.

Dr. Asbury Carlton Swimley

Died at his home in Winchester, Va., August the 30th, following a short illness with pneumonia. He was a native of Ohio and fifty years of age. After practicing pharmacy for several years, Dr. Swimley took up the study of medicine at the former University College of Medicine in Richmond, Va., from which he took his degrees of M. D., in 1908. He was a prominent physician in his section, a Mason, and a member of the Medical Society of Virginia. His wife, mother, a brother and a sister survive him.

Dr. Waller Jameson,

Roanoke, Va., died August 9th, after having been in bad health for some time. He was fifty years of age and studied medicine at the University of Virginia, from which he graduated in 1903. Dr. Jameson had been a member of the Medical Society of Virginia for a number of years.

Dr. Samuel H. Mitchell,

Elk Creek, Va., died at his home in that place, July 28th, as a result of heart disease. Dr. Mitchell was sixty-six years of age and graduated in medicine from the Medical College of Virginia in 1885.

Dr. John W. Aylor

Died at his home in Culpeper, Va., August 30th, at the age of eighty-seven years. He graduated at the University of Virginia medical school in the class of '68, after serving under Stonewall Jackson during the Civil War. Dr. Aylor had practiced in West Virginia for about forty years.

Dr. Charles Williamson Richardson,

Washington, D. C., member of the Board of Trustees of the American Medical Association, died in Boston, Mass., August the 25th, at the age of sixty-eight years. His death followed an operation performed recently. He graduated in medicine from George Washington University School of Medicine in 1884 and also received a degree in medicine from the University of Pennsylvania that same year. Dr. Richardson had been the recipient of many honors in the medical world. At the time of his death, he was emeritus professor of laryngology and otology at the George Washington University School of Medicine.

Dr. Charles Willcox, M. C., U. S. A.,

Washington D. C., died June 28th, at the age of sixty-four. He was an alumnus of the University of Virginia, Department of Medicine, class of 1889. Dr. Willcox retired from the Army in 1922, after thirty years of service.

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